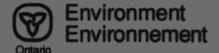
Water Plant Optimization Study

LEAMINGTON/UNION WATER SYSTEM

May 1991



Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca

WATER PLANT OPTIMIZATION STUDY

Leamington Union Water System

Project No. 7-2025

May 1991



Cette publication technique n'est disponible qu'en anglais.

Copyright: Queen's Printer for Ontario, 1991
This publication may be reproduced for non-commercial purposes with appropriate attribution

PIBS 1554 log 89-2302-124

Study conducted by:

D.S. Madill of LaFontaine, Cowie, Buratto & Associates Limited

Under the direction of the Leamington Project Committee:

Ron Hunsinger

- MOE Water Resources Branch

Dick Brown

- MOE Southwest Region

Bill Allsop Bill Gregson - MOE Union Water System - MOE Project Engineering Branch

Janusz Budziakowski - MOE Environmental Approvals Branch

Gerry Sigal

- R.V. Anderson Associates Limited

Address all correspondence to:

Ministry of the Environment Water Resources Branch 1 St. Clair Ave. W., 4th Floor Toronto, Ontario M4V 1K6

Please note that some of the recommendations contained in this report may have already been completed at time of publication. For more information, please contact the local municipality. or the Water Resources Branch of the Ministry of the Environment.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The purpose of the Water Plant Optimization Study is to prepare a document that describes the present condition of a water plant with respect to operation as well as information regarding the quantity and quality of raw and finished water. The report attempts to make recommendations that will allow the plant to operate in an optimum condition so that the best possible finished water quality is achieved with emphasis on particulate removal and disinfection. The approach is to optimize the existing facilities and make recommendations for short term and long term improvements. It is anticipated that the optimization study documents will be updated annually.

The Union Water Treatment Plant is very well run and the finished water quality is very good. Although it might be difficult to improve on finished water quality with the existing equipment, the following recommendations are suggested as a means of refining record keeping, improving accuracy and making operation of the plant easier.

PHYSICAL IMPROVEMENTS

- Provide necessary chlorine gas piping modifications and additional equipment to allow separate measurement of pre- and post-dosages.
- Provide sample piping and equipment to allow sampling of clearwell influent for chlorine residual analysis.
- Implement a flowmeter calibration program.
- Modify clarifier sludge sampling system to simplify the collection of sludge samples.
- Consider a streaming current monitoring system to optimize coagulant dosages.
- Upgrade flow measuring and recording system to replace existing obsolete equipment.

- Consider a Distributed Programmable Logic Control System to provide automatic process control alarms, operator interface, automatic data collection, storage, display, trending and report generation.
- Consider covering the clarifiers.
- Modify filter inlet/ outlet piping to eliminate flow restrictions.
- Provide continuous chlorine residual and turbidity analysis systems for the plant effluent.
- Rectify problem of deficient post-chlorination contact time.

STUDIES

- Expand the aluminium testing program to determine if pH correction of the raw water is warranted to improve treatment and/ or reduce aluminium residual in the plant effluent.
- Modify filter operating procedures to optimize particulate removal.
- Carry out sieve analyses regularly to determine the extent of media degradation.

WATER PLANT OPTIMIZATION STUDY

UNION WATER SYSTEM WATER TREATMENT PLANT

ONTARIO MINISTRY OF THE ENVIRONMENT

PROJECT NO. 7-2025

TABLE OF CONTENTS

| | | Page No |
|--------|--|---------|
| SUMN | MARY OF FINDINGS AND RECOMMENDATIONS | 1 |
| LIST C | OF FIGURES | v |
| LIST (| OF TABLES | VI |
| INTRO | DOUCTION AND TERMS OF REFERENCE | 1 |
| SECT | ON A - RAW WATER | |
| A.1 | Source | 3 |
| A.2 | Quality | 3 |
| SECT | ION B - FLOW MEASUREMENT | |
| B. 1 | Raw Water Flow Measurement | 5 |
| B.2 | Treated Water Flow Measurement | 5 |
| B.3 | Filter Backwash Water Flow Measurement | 6 |
| B.4 | Filtered Water Flow Measurement | 6 |
| B.5 | Validity of Flow Measurement | 6 |
| SECT | ION C - PROCESS COMPONENTS | |
| C.1 | General | 7 |
| C.2 | Design Data | 7 |

| | | Page No |
|------|--|---------|
| C.3 | Process Component Inventory | 9 |
| C.4 | Chemical Systems | 14 |
| C.5 | Sampling | 17 |
| C.6 | Process Automation | 20 |
| C.7 | Photographs | 20 |
| SECT | TION D - PLANT OPERATION | |
| D.1 | Flow Control | 46 |
| D.2 | Chemical Dosage Control | 46 |
| D.3 | Filter Backwashing Procedure | 48 |
| D.4 | Filter Maintenance | 48 |
| SECT | TION E - PLANT PERFORMANCE | |
| E.1 | Particulate Removal | 50 |
| E.2 | Disinfection | 61 |
| SECT | TION F - RECOMMENDATIONS | |
| F.1 | Short Term Modifications | 64 |
| F.2 | Long Term Modifications | 65 |
| App | endix A | |
| | Figure 3 - Site Plans | |
| | Figure 4 - Block Schematic | |
| | Figure 5 - Process Flow Diagram (3 sheets) | |
| App | pendix B | |
| | Plant Log Sheets | |
| App | pendix C | |
| | Data Tables | |
| App | pendix D | |
| | Terms of Reference | |

LIST OF FIGURES

| Figure No. | Description | Page No. |
|------------|--|------------|
| 1 | Location Map | 4 |
| 2 | Block Diagram | 8 |
| 3 | Site Plan | Appendix A |
| 4 | Block Schematic | Appendix A |
| 5A | Process Flow Diagram | Appendix A |
| 5B | Process Flow Diagram | Appendix A |
| 5C | Process Flow Diagram | Appendix A |
| 6 | Low Lift Pump Curve | 11 |
| 7 | High Lift Pump Curve | 15 |
| 8 | Filter Performance July 19 - 22, 1988 | 57 |
| 9 | Filter Performance August 14 - 17, 1988 | 57 |
| 10 | Filter No. 1 Performance March 5 - 7, 1987 | 59 |

LIST OF TABLES

| Table No. Description | | Page No. |
|-----------------------|---------------------------------------|------------|
| 1.0 | Flows | Appendix C |
| 1.1 | Daily Flows | Appendix C |
| 2.0 | Particulate Removal Summary | Appendix C |
| 2.1 | Particulate Removal Profile | Appendix C |
| 3.0 | Disinfection Summary | Appendix C |
| 3.1 | Disinfection Profile | Appendix C |
| 4.0 | T & O Control Alkalinity | |
| | Adj. & Fluoridation Summary | Appendix C |
| 4.1 | T & O Control Alkalinity | * |
| | Adj. & Fluoridation Profile | Appendix C |
| 5.0 | WPOS Water Quality (4-year Summary) | Appendix C |
| 6.0 | Algae Count | Appendix C |
| 7.0 | Bacteriological Testing | Appendix C |
| 8.0 | Alert Levels (Distribution System) | Appendix C |
| 8.1 | Alert Levels (Treated Water at Plant) | Appendix C |
| 9 | Sampling Systems | 18 |
| 10 | Plant Testing Summary | 19 |

WATER PLANT OPTIMIZATION STUDY

UNION WATER SYSTEM WATER TREATMENT PLANT

ONTARIO MINISTRY OF THE ENVIRONMENT

PROJECT NO. 7-2025

INTRODUCTION AND TERMS OF REFERENCE

The purpose of the Water Plant Optimization Study (WPOS) is to document and review the present conditions and determine an optimum treatment strategy for contaminant removal at the plant, with emphasis on particulate removal and the disinfection processes.

In striving for excellence in water treatment, it is important to examine all possible approaches, but first, optimum use should be made of the processes already in place.

This optimization study is a beginning and not an end to itself; it is the start of an ongoing documentation of the operation of the plant. It is recommended that this document be updated on an annual basis.

The Ontario Ministry of the Environment has instituted a Drinking Water Surveillance Program (D.W.S.P.) consisting of a continuously updated base of information on Ontario water treatment plants and water quality. In connection with the D.W.S.P., a specific plant investigation and process evaluation study is required for each plant entering the program. The study has been prepared in accordance with a detailed protocol prepared by the Ministry of the Environment.

The Union Water System Water Treatment Plant provides the water supply for the Towns of Essex, Kingsville and Leamington, the Townships of Gosfield North, Gosfield South, Mersea and parts of the Townships of Maidstone and Rochester. In addition, the H. J. Heinz Co. of Canada in Leamington is a system participant and utilizes approximately 30% of the water plant's yearly production.

Serviced populations in the municipalities are as follows:

| Essex | 6,500 |
|----------------|--------|
| Kingsville | 5,500 |
| Leamington | 13,000 |
| Gosfield North | 2,100 |
| Gosfield South | 7,300 |
| Mersea | 3,700 |
| Maidstone | 1,700 |
| Rochester | 840 |

The optimization study is based on plant operating data from August 1983 to July 1986. It should be noted that all information in the report with respect to equipment, and operating procedures relates to the above period.

SECTION A

A.1 Source

The source of the water for the Union Water System Water Treatment Plant is Lake Erie. The site is located approximately midway between the Towns of Kingsville and Leamington. The Intake structure is approximately 457 m (1,500 ft) offshore, and water is drawn from a depth of 3.4 m (11 ft) below mean water level, approximately 1.5 m (5 ft) above the lake bed.

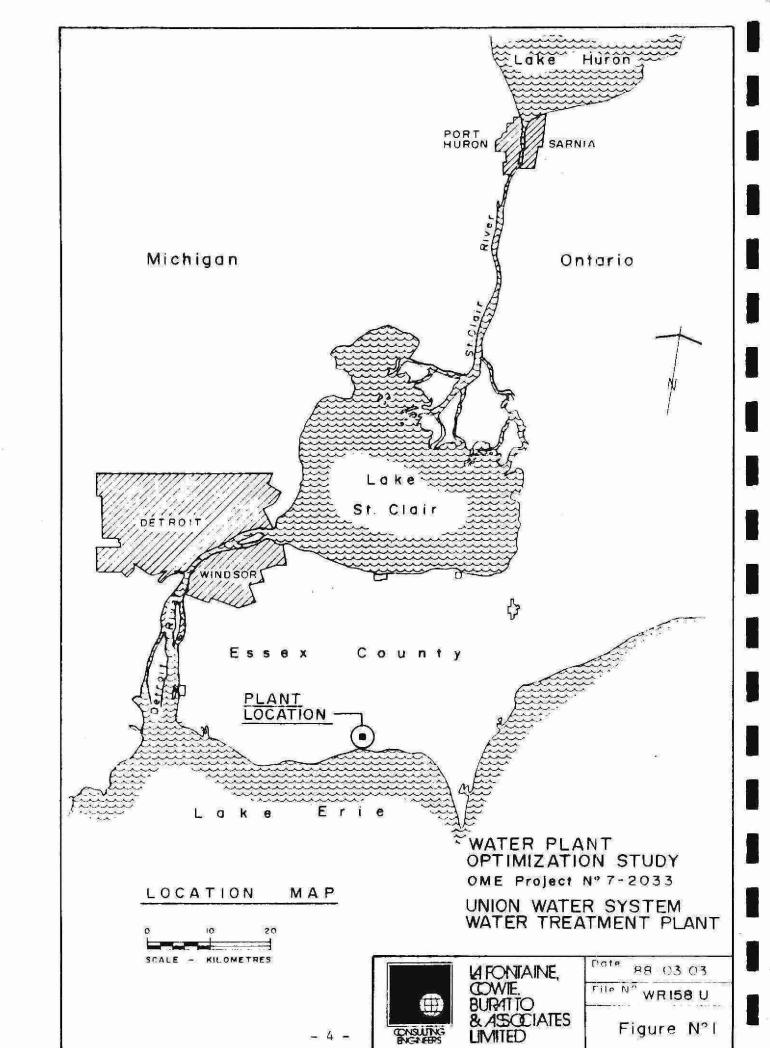
The nearest upstream sanitary sewage treatment works is approximately 8 km (5 mi) west of the intake where seasonal discharge (spring and fall) from the Town of Kingsville oxidation ponds enters the lake.

The location of the plant is shown on Figure No. 1.

A.2 Quality

Throughout the study period, monthly raw water physical and chemical parameters varied as follows:

| Parameter | Min. | Max. | Avg. |
|------------------|------|------|------|
| Turbidity (FTU) | 1.2 | 122 | 12.5 |
| Colour (Hazen U) | 1 | 15 | 6.8 |
| рН | 7.75 | 8.4 | 8.15 |
| Alkalinity | 80.0 | 91.5 | 88.8 |
| Hardness | 98 | 113 | 107 |



SECTION B FLOW MEASUREMENT

B.1 Raw Water Flow Measurement

Raw water flow is measured at the water treatment plant building by two venturi tubes installed in the two 450 mm (18 in) diameter raw water pipes upstream of the microstrainer inlets. The high and low pressure taps from each tube are connected to a pneumatic differential pressure transmitter which has its output signal connected to a square root extractor. The pneumatic outputs of the two square root extractors are input to a common pneumatic totalizer which has its output signal connected to a pressure/current converter. The output of the converter is fed to an electronic counter which indicates the total raw water flow.

In addition to the above, the instrumentation system has strip chart recorders recording flow through the individual pipelines and total flow. Plant staff indicate the system is only adjusted when an obvious discrepancy is noted between the recorded flow and the capacity of the raw water pumps. The flow measuring and recording system is not calibrated on a regular basis.

Because of the number of instruments in the flow measuring system and the lack of regular calibration, the raw water flow records could be subject to considerable error. This could explain why the raw water flows are less than the treated water flows the majority of the time. (see Table 1.1 in Appendix C)

B.2 Treated Water Flow Measurement

Treated water flow is measured by a Sparling 200 mm x 760 mm (8 in x 30 in) compound meter in the plant effluent pipeline. Flow records are taken from a remote counter on the plant's master control panel. The remote reading is checked frequently against the reading on the register on the meter and the two readings have been found to agree. The treated water flow measuring system is not calibrated on a regular basis.

B.3 Filter Backwash Water Flow Measurement

Main backwash water flow is measured by a 300 mm (12 in) diameter venturi tube installed in the discharge piping of the backwash water pump. A pneumatic system similar to that for raw water flow indicates and totalizes main washwater flow on the filter control console. In addition, a manual loading station on the filter control console allows the operator to manually adjust the backwash water flow rate.

The flow to the filter surface agitators is measured by a 150 mm (6 in) diameter venturi tube having a pneumatic instrumentation system similar to the raw water system.

B.4 Filtered Water Flow Measurement

Flow through each filter is measured by a 300 mm (12 in) diameter venturi tube using a pneumatic system similar to the raw water flow measuring system.

B.5 Validity of Flow Measurement

a) Venturi/Pneumatic Systems

The venturl/pneumatic flow measuring systems have been in operation for approximately 30 years and it is difficult in some cases to obtain replacement parts for some of the instruments. Plant staff has not indicated any other major problems with the flow measuring systems but because the parts and instrumentation systems are worn and because of the number of instruments involved in each measuring system, as indicated in Section B.1 - Raw Water Flow Measurement, the accuracy of the measuring systems could probably be improved by replacing the outdated equipment with new modern equipment.

SECTION C PROCESS COMPONENTS

C.1 General

The plant components include the intake, coarse and fine raw water screens, low lift pumps, microstrainers, solids contact upflow clariflers, filters, underground storage, high lift pumps and chemical facilities for coagulation, disinfection and taste and odour control (Figure 2).

Treatment flow rates are selected manually and the high lift pumps are operated to maintain the water level in the elevated storage tank.

Refer to Appendix "A" for:

Figure 3 - Site Plan

Figure 4 - Block Schematic

Figure 5 - Process Flow Diagram (3 sheets)

C.2 Design Data

a) Plant Capacity

The plant, as originally constructed in 1960, had a design capacity of 36.43 ML/d (8 mgd). In subsequent years, an additional clarifier and microstrainer were added (1970) and additional pumping capacity installed. In 1973 the top 280 mm (11 in) of filter sand (1/2 the depth) was removed and replaced with anthracite to allow operation at a higher rate. It was hoped the capacity could be doubled to 72.6 ML/d (16 mgd). However, the filter inlet works were designed for the original plant capacity of 36.43 ML/d (8 mgd) and at flows greater than 68.2 ML/d (15 mgd), hydraulic phenomena occur at the filter inlet channels which restrict the flow causing discharge through the overflows. This problem has been studied and a solution proposed that would allow operation of the filters at 72.6 ML/d (16 mgd). However, because the corrective work requires shutting down all the filters, it will not be undertaken until proposed additional filters have been constructed. At the present time then, the plant should be rated at 68.2 ML/d (15 mgd).

UNION WATER SYSTEM WATER TREATMENT PLANT BLOCK DIAGRAM

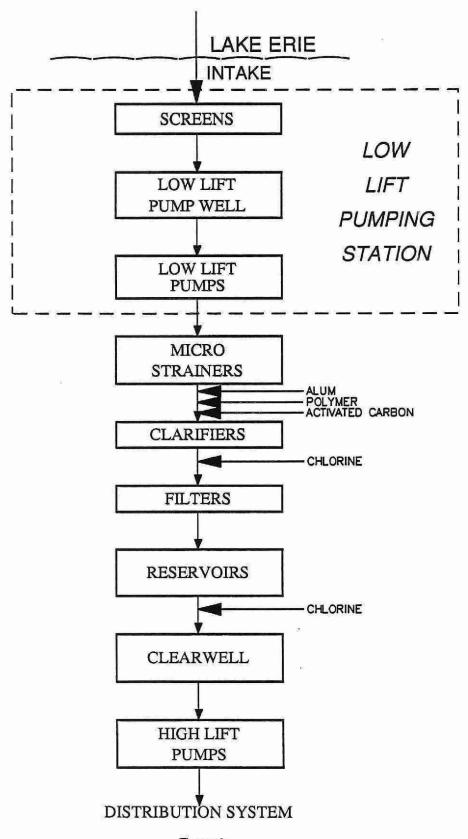


Figure 2.

C.3 Process Component Inventory

a) Intake System

Crib

- One 4.9 m x 4.9 m (16 ft x 16 ft) rock-filled timber crib with a 3.0 m
 (10 ft) diameter by 1.37 m (4.5 ft) diameter steel belimouth 90 degree elbow.
- Inlet port elevation 170.7 m (560.1 ft), approximately 1.5 m (5 ft) above the lake bed.

Intake Pipe

- 457 m (1,500 ft) long 1350 mm (54 in) diameter corrugated steel intake pipe installed approximately 1.5 m (5 ft) below the lake bed.
- Capacity 218 ML/d at mean lake surface elevation of 174.1 m (571.2 ft).

b) Screening

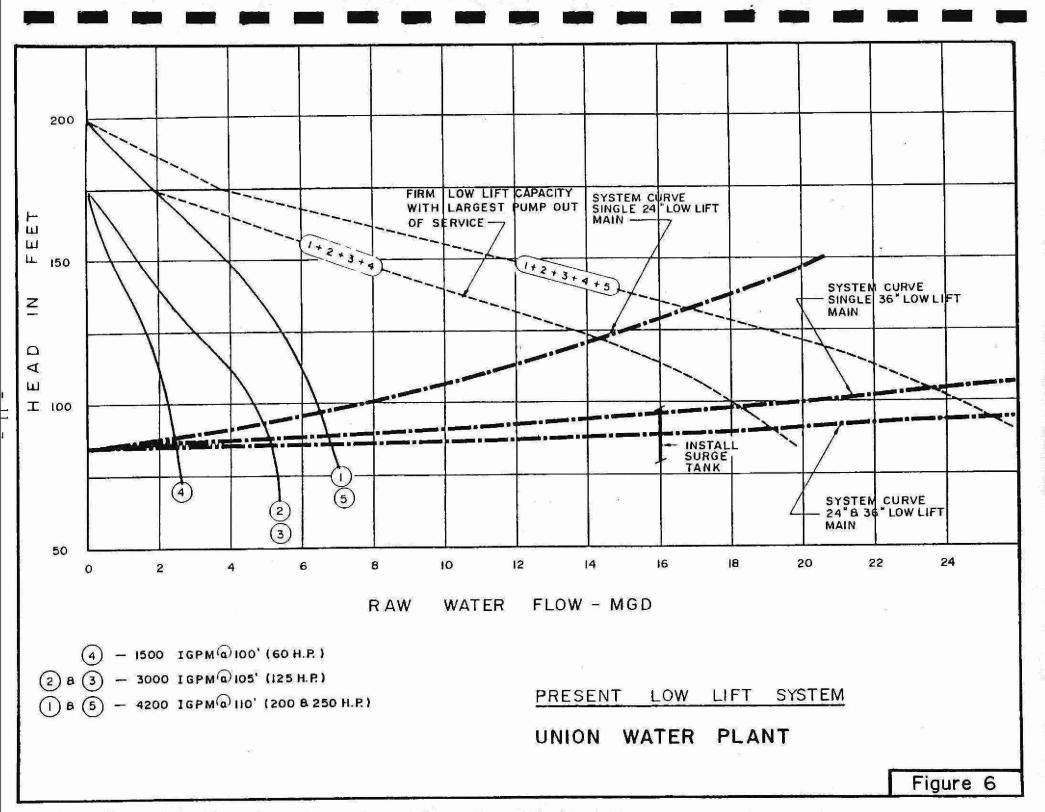
- The entry chamber of the Low Lift Pumping Station has a "U"-shaped fixed coarse bar screen having an effective length of approximately 4.4 m (14.5 ft). The screen is approximately 5 m (16.4 ft) high and is constructed of 40 mm x 9.5 mm (1.5 in x 0.375 in) thick flat bars at 75 mm (3 in) centers.
- The Low Lift Pumping Station has two travelling water screens 1.8 m (5.9 ft) wide by 5 m (16.4 ft) high. The screens have 9.5 mm (0.375 in) mesh.

c) Low Lift Pumping

- Pump Suction Well is 14.4 m x 5.9 m x 4.67 m (47.25 ft x 19.33 ft x 15.33 ft) deep. Volume is approximately 300m³ (66,000 gal) at normal water levels.
- Five Vertical turbine pumps with the following nominal design operating points:
 - No. 1 27.5 ML/d (4,200 gpm) @ 33.5 m (110 ft)
 - 149 kW (200 HP) elec.
 - No. 2 19.6 ML/d (3,000 gpm) @ 32 m (105 ft)
 - 93 kW (125 HP) elec. diesel
 - No. 3 19.6 ML/d (3,000 gpm) @ 32 m (105 ft)
 - 93 kW (125 HP) elec.
 - No. 4 9.8 ML/d (1,500 gpm) @ 30.5 m (100 ft)
 - 45 kW (60 HP) elec.
 - No. 5 27.5 ML/d (4,200 gpm) @ 33.5 m (110 ft)
 - 187 kW (250 HP) elec.
- Total Capacity 113 ML/d* (24.9 mgd)
- Firm Capacity 86.4 ML/d* (19 mgd)
- Standby Capacity 19.6 ML/d (4.3 mgd)
- Two Low Lift Pump discharge mains
 - 600 mm (24 in) diameter 890 m (2,920 ft) long
 - 900 mm (36 in) diameter 1,100 m (3,609 ft) long
- Refer to pump curve in Figure 6. The firm capacity is derived from the curves.

d) Microstrainers

- Two Glenfield-Kennedy 3 m (10 ft) diameter x 3 m (10 ft) long microstrainers with MK-1 stainless steel 35 micron fabric, capacity 36.3 ML/d (8 mgd) each.



e) Clarification

- Two outdoor clarifiers are in place.
- One Graver 28.65 m (94 ft) diameter x 5.64 m (18.5 ft) SWD solids contact clarifler with surface collection launders, capacity 36.3 ML/d (8 mgd).
- One Eimco 28.65 m (94 ft) diameter x 5.64 m (18.5 ft) SWD solids contact clarifler with submerged collection pipes, capacity 36.3 ML/d (8 mgd).

Overflow rates:

- 2.35 m/h (0.8 gpm/sq ft) based on total tank area
- 2.72 m/h (0.93 gpm/sq ft) based on surface area of settling zone (Clarifier No. 1)
- 2.63 m/h (0.9 gpm/sq ft) based on surface area of settling zone (Clarifier No. 2)
- Volume of each clarifier 3,950 m³ (870,000 gal), retention time
 157 minutes at 36.3 ML/d (8 mgd).
- Sludge disposal is through plant storm sewer system to Lake Erie.

f) Filtration

- Four double filters each 5.5 m (18 ft) x 11.0 m (36 ft), one-half of each filter backwashed separately.
- Palmer surface agitators in all filters (8 per filter).
- Filter media:

Miller block underdrains
380 mm (15 in) depth of graded gravel
280 mm (11 in) depth of silica sand, E.S.= 0.55, U.C.= 1.59
280 mm (11 in) depth of anthracite, E.S.= 0.90, U.C.= 1.65

- Depth of water above filter media 2 m (6.5 ft)
- Influent turbidity range (FTU): 0.15 6.76 (extremes)
- Effluent turbidity range (FTU): 0.05 0.82 (extremes)
- Length of run: 60 hr. (average)
- Headloss:

clean bed: 0.30 - 0.64 m (1 - 2 ft) depending on flow dirty bed: 2.13 m (7 ft) maximum

- Filtering flow rate: 3.2 12.8 m/h (1.1 4.4 gpm/sq ft)
- Backwash flow rate: 32 m/h (11 gpm/sq ft)
- Water filtered/cycle: 430 m³/m² (8,800 gal) average
- Backwash water use: 3.9 m³/m²/wash (80 gal/wash)
- Retention time: 13.5 min. at 12 m/h (4 gpm/sq ft)
- Capacity: 68.2 ML/d (15 mgd) at 12 m/h (4 gpm/sq ft)

g) Underground Storage

- One 9,090 m³ (2 mil gal) underground concrete reservoir.
- One 13,636 m³ (3 mil gal) underground concrete reservoir.

h) High Lift Pumping

- Pump suction well (clearwell) 21.5 m (70.5 ft) x 4.5 m (14.75 ft) x 5 m (16.5 ft) deep concrete well
- Volume 480 m³ (105,000 gal)
- Retention time 9.5 minutes @ 72.6 ML/d (16 mgd)
- High lift pumps (horizontal split case) with the following nominal design operating points:
 - No. 6 17.7 ML/d (3.9 mgd) @ 61 m (200 ft)
 - 149 kW (200 HP) elec.
 - No. 7 17.7 ML/d (3.9 mgd) @ 61 m (200 ft)
 - 149 kW (200 HP) elec.
 - No. 8 23.6 ML/d (5.2 mgd) @ 61 m (200 ft)
 - 224 kW (300 HP) elec./diesel

No. 9 - 47.1 ML/d (10.4 mgd) @ 61 m (200 ff)

- 373 kW (500 HP) elec.

No. 10 - 5.2 ML/d (1.1 mgd) @ 61 m (200 ft)

- 56 kW (75 HP) elec.

No. 12 - 12.3 ML/d (2.7 mgd) @ 64 m (210 ft)

- 112 kW (150 HP) elec.

No. 14 - 13.1 ML/d (2.9 mgd) diesel engine-driven

- Total capacity in excess of 109 ML/d (24 mgd)*
- Firm capacity 96 ML/d (21 mgd)*
- Standby capacity 36.7 ML/d (8.1 mgd)
- * Refer to pump curve in Figure 7. The firm capacity is derived from the curves however the curve for pump no. 14 is not shown and it is estimated it would contribute 10 ML/d (2.2 mgd).

i) Backwash Waste Water Treatment

Filter backwash wastewater and clarifier sludge is discharged by gravity without treatment to Lake Erie.

C.4 Chemical Systems

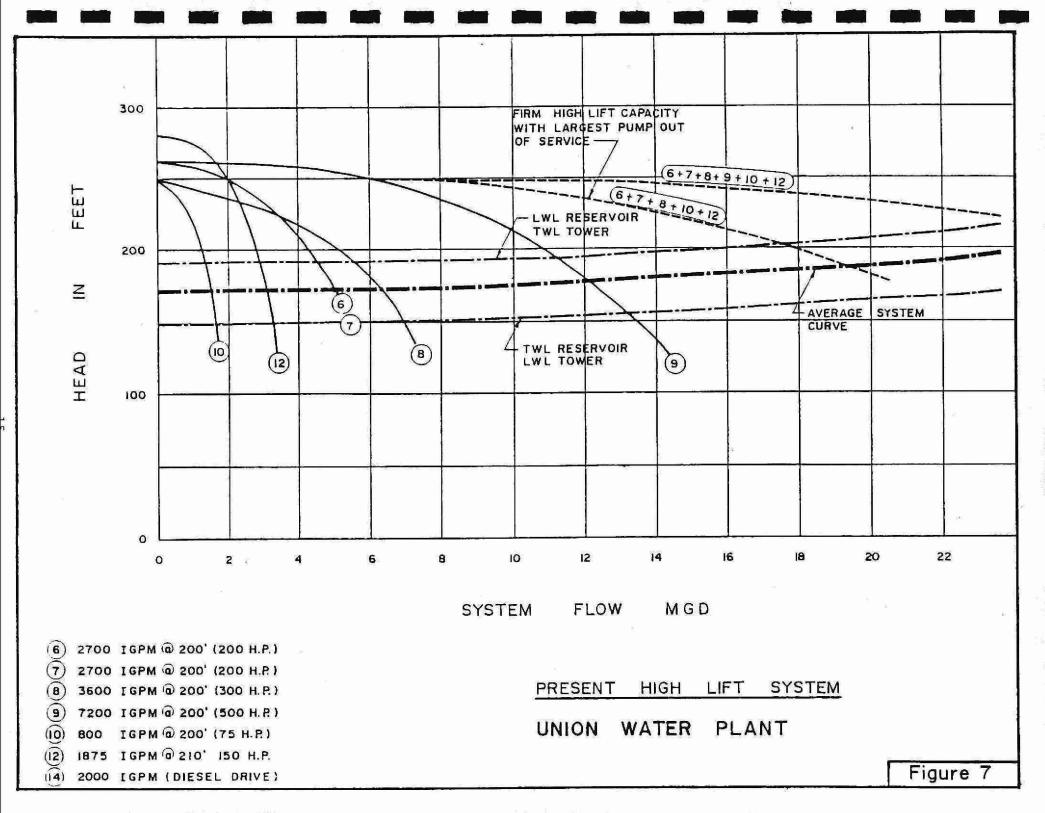
a) Disinfection

- Chlorine is stored as a liquid in ten 0.9 tonne (1 ton) containers under 80 psig and is withdrawn as a gas. One empty container is maintained for emergency storage purposes.
- Application points

pre: clarifier effluent (clarifier influent prior to 1985 05 07)

post: clearwell inlet

- Two scales are used. Chlorine for pre- and post-chlorination is withdrawn from the containers on one scale while the containers on the other scale are on standby.



Chlorinators

pre:

Wallace & Tlernan Model A711 gas chlorinator.

907 kg/d (2,000 lb/d) maximum capacity,

0-13 kg/d (0-250 lb/d) rotameter.

post:

Wallace & Tiernan Model A711 gas chlorinator.

907 kg/d (2,000 lb/d) maximum capacity.

0-68 kg/d (0-150 lb/d) rotameter.

standby:

Wallace & Tiernan Model A711 gas chlorinator,

907 kg/d (2,000 lb/d) maximum capacity,

0-113 kg/d (0-250 lb/d) rotameter.

 The chlorine solution derived from the pre-chlorinator is proportioned through two rotameters and fed to each of the two clariflers.

b) Coagulant

- Liquid alum stored in two 22.7 m³ (5,000 gai) P.V.C. lined concrete tanks.
- Two Wallace & Tiernan Model 44-225 dual-head diaphragm metering pumps with calibration chambers, maximum capacity 13 L/min (172 gal/hr). Maximum dosage is 167 mg/L at 72.6 ML/d (16 mgd). One backup pump is available.
- Application point: clarifier influent.

c) Coagulant Aid and Filter Aid

- (i) Coagulant Aid
- Alchem 8171-SC non-lonic polymer stored in drums.
- Two 2.27 m³ (500 gal) mixing/day tanks.

- One Wallace & Tiernan Model 44-125 dual-head diaphragm chemical metering pump with calibration chambers, maximum capacity 13 L/min. Maximum dosage is 0.25 mg/L at 72.6 ML/d (16 mgd).
- Application point: clarifier influent

(ii) Filter Aid

- Alchem 8103 is applied to water leaving the clariflers when turbidity going onto the filters is high.
- The equipment is similar to that used for coagulant aid and incorporates a Wallace & Tiernan Model 44-216 diaphragm chemical metering pump.

d) Taste and Odour Control

- Powdered activated carbon (Hydrodarco B) stored in 22 kg (50 lb) bags.
- One bucket elevator, two 0.25 m³ (9 cu ft) storage hoppers.
- Two Wallace & Tlernan volumetric screw feeders with a maximum capacity of 0.95 m³/d (33 cu ft/d) each and mixing tanks.
- Two centrifugal feed pumps.
- Maximum dosage rate 15 mg/L at 72.6 ML/d (16 mgd).

C.5 Sampling

The following is a description of the tests carried out by plant staff. Unless otherwise indicated, test samples are taken from display jars located adjacent to the laboratory. Table 9 gives information regarding the sample pumping systems. The sample flow rate was determined from a time-displacement test carried out at the display jars. Table 10 gives a summary of the tests performed at the plant.

TABLE 9
SAMPLING SYSTEMS

| SOURCE | LENGTH/DIA m/mm | FLOW L/min. | VELOCITY m/s | SAMPLE TRAVEL TIME min. |
|-----------------------|--------------------|----------------|-----------------|-------------------------|
| Raw Water | 58/20 | 1.9 | 0.10 | 9.7 |
| (one sample pipe) | 11/12 | 1.9 | 0.28 | 0.7 10.4 min total |
| Clarifier Effluent #1 | 28/12 | 1.9 | 0.28 | 1.67 |
| Clarifier Effluent #2 | 16/20 | 1.9 | 0.10 | 2.7 |
| (one sample pipe) | 11/12 | 1.9 | 0.28 | 0.7 3.4 min total |
| Filter Effluent | 43/12 | 1.9 | 0.28 | 2.6 |
| Plant Effluent | 23/12 | 1.9 | 0.28 | 1.4 |

TABLE 10
PLANT TESTING SUMMARY

| TEST | CHEMICAL APPLICATION POINT | SAMPLING POINT | CONTACT | TESTING FREQUENCY | REPORTING FREQUENCY | TESTING INSTRUMENT |
|--|----------------------------------|---|--------------------------|----------------------|------------------------|--|
| Pre-chlorine Residual | Clarifler Effluent | Combined Filter Effluent | 18 min. at 72.6 ML/d | 2 hours | 2 hours | Hach dr/2 Spectrophotometer DPD Method |
| Post-chtorine Residual | Clearwell - Intet | Plant Discharge Header | 9.5 mln. at 72.6 ML/d | 2 hours | 2 hours | Hach dr/2 Spectrophotometer DPD Method |
| Raw Water Turbidity | N/A | Micro-Strainer Inlet Piping | N/A | Continuous | Hourly | Flow through cell in Hach Model 18900 Ratio Turbidimeter |
| Clarifier Effluent Turbidity | N/A | Filter Inlet Piping | N/A | 2 hours | 2 hours | Hach Model 18900 Ratio Turbidimeter |
| Filter Effluent Turbidity (Individual) | N/A | Filter Effluent Piping at Each Filter | N/A | Continuous | Hourly | Hach Model 1720B Turbidimeter located at sampling location Remote indication at laboratory |
| Filter Effluent Turbidity (Combined) | N/A | Filter Effluent Header Pipe | N/A | Continuous | Hourly | Hach Model 17208 Turbidimeter located at sampling location Remote indication at laboratory |
| Plant Effluent Turbidity | NA | High Lift Pump Discharge Header | N/A | Continuous | Hourly | Hach Model 17208 Turbidimeter and Indication at Indocratory |
| Clarifler Effluent Aluminum | N/A | Clarifler Effluent | N/A | Weekly | Weekly | Hach Model dr/2 Spectrophotometer |
| Piant Effluent Aluminum | N/A | High Lift Pump Discharge Header | N/A | Weekly | Weekly | Hach Model dr/2 Spectrophotometer |
| Raw Water pH | N/A | Micro-Strainer Inlet Piping | N/A | Daily | Daily | Orion Research Model 231 pH meter |
| Plant Effluent pH | N/A | High Lift Pump Discharge Header | N/A | Daily | Daily | Orion Research Model 231 pH meter |

With respect to turbidity measurements, the Hach Model 18900 Ratio Turbidimeter is calibrated once per month using primary standards. The Hach Model 1720B Turbidimeters are calibrated to the Ratio Turbidimeter once per week.

C.6 Process Automation

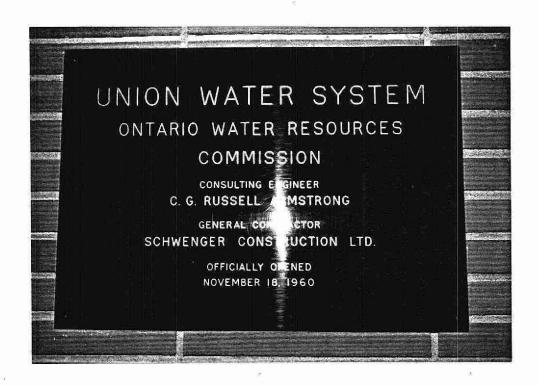
The plant had instrumentation and control systems that allowed completely automatic operation of the plant. However, because the plant operates at maximum capacity during the summer some of the automatic control systems are a detriment to operation of the plant. For example, automatic initiation of filter backwashing is not appropriate during peak periods.

The plant management prefers to have more operator involvement in the operation of the plant and has a rigorous operating and reporting system.

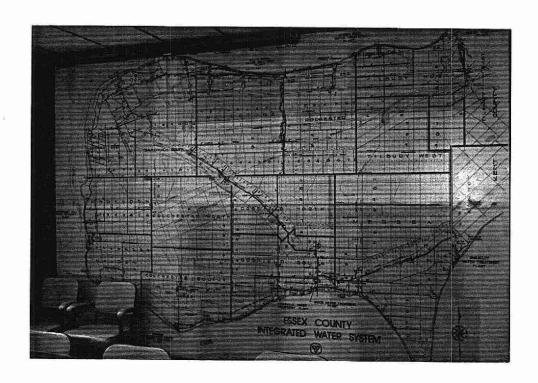
The master control panel has indications of the operational status of all equipment and has level and flow indicators and recorders for the plant processes. Most of the equipment can be operated from the master control panel.

C.7 Photographs

Following are photographs of the plant and its components.



1. Plant Plaque



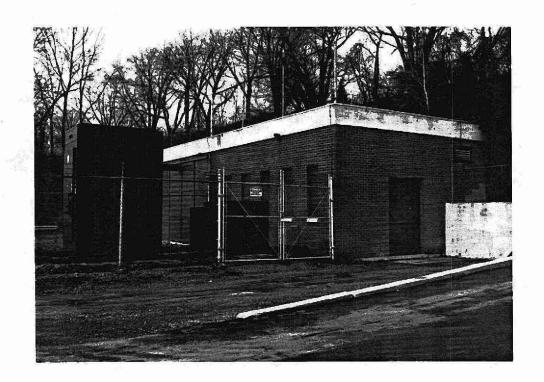
2. Map of Service Area



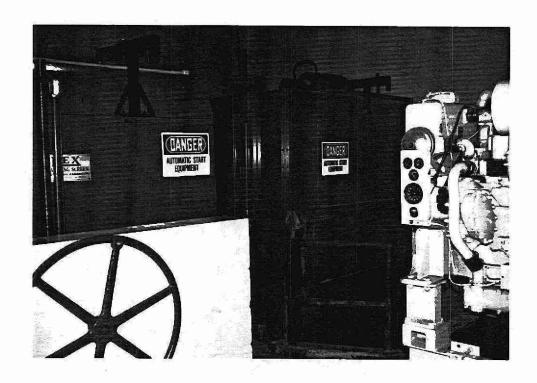
3. Lake Erie Shoreline at Low Lift Pumping Station Site



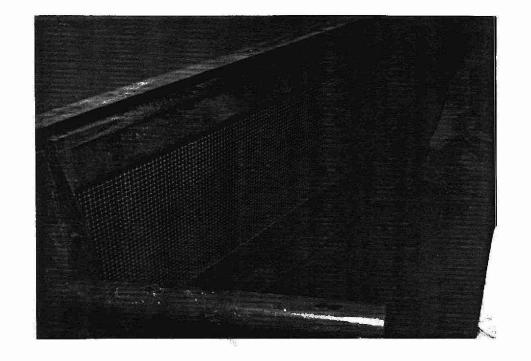
4. South and West Elevations of Low Lift Pumping Station



5. South and East Elevations of Low Lift Pumping Station



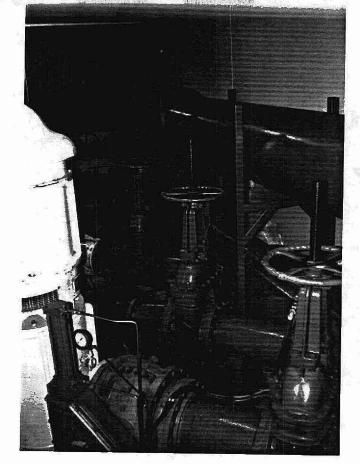
6. Travelling Water Screens



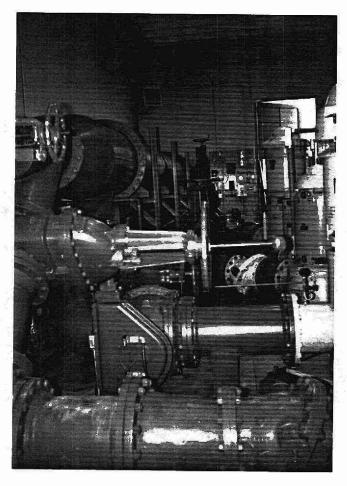
7. Close Up of Travelling Water Screen Basket



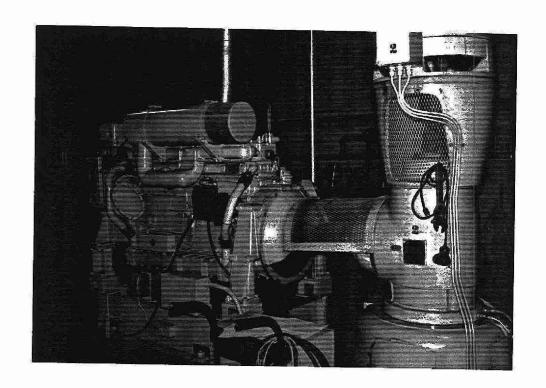
8. View of Low Lift Pumps and Motors



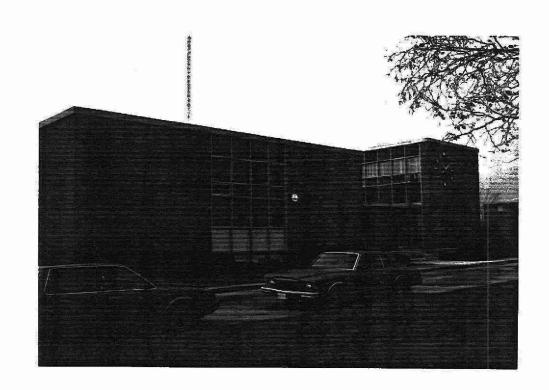
9. Low Lift Pump Discharge Piping Valves and Headers



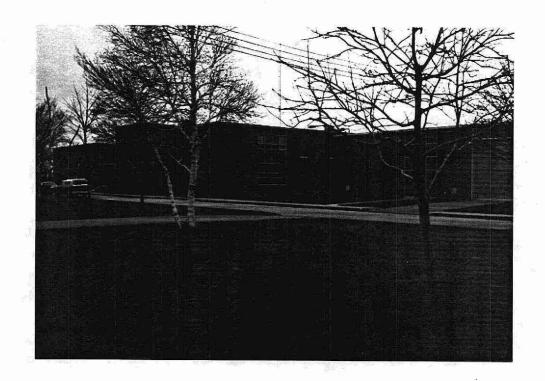
10. Low Lift Pumps and Piping



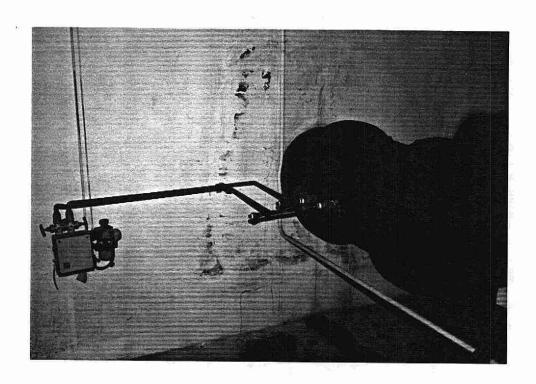
11. Low Lift Pump No. 2 - Diesel Engine Drive



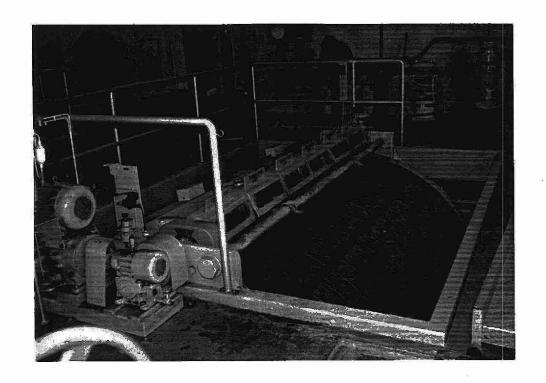
12. View of Treatment Plant Building from the Southeast



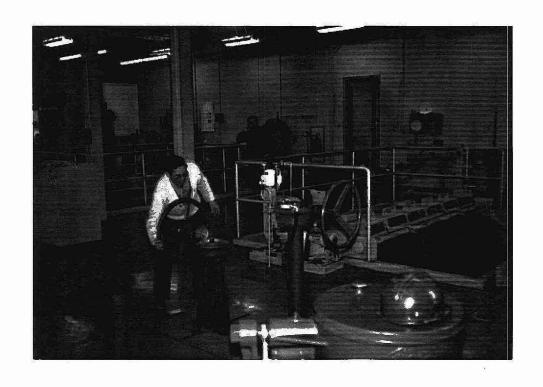
13. View of Water Treatment Plant Building and Chlorine Building from the Northeast



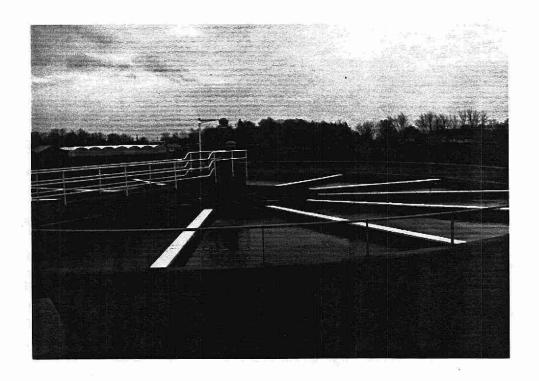
14. Raw Water Flow Measuring System - Venturi Tube and Differential Pressure Transmitter



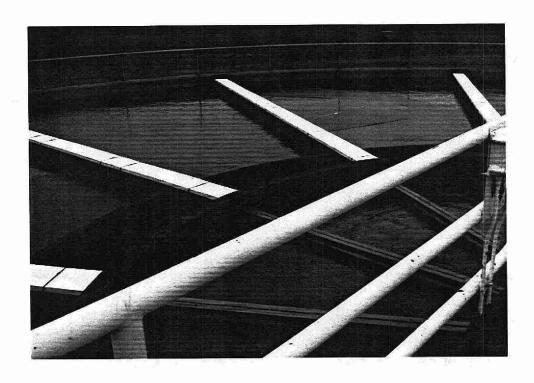
15. View of Microstrainer



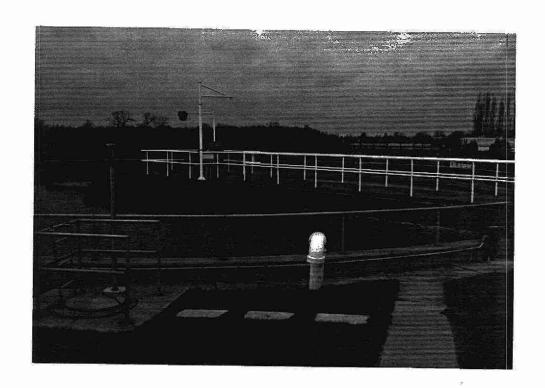
16. Microstrainer Room



17. View of Clarifler No. 1



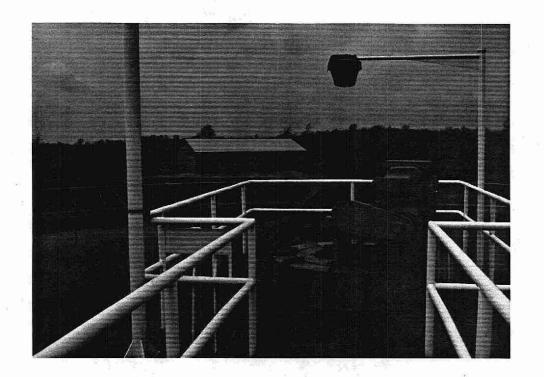
18. Clarifier No. 1 - Surface Launders Covered for Winter Operation



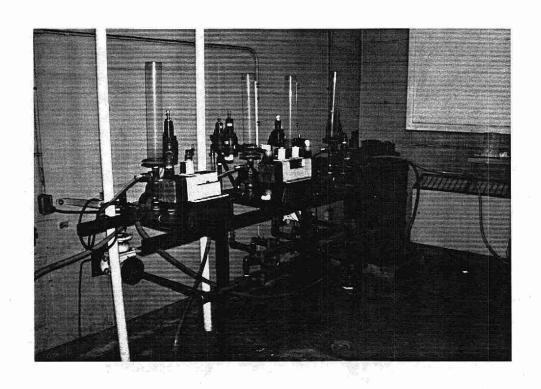
19. View of Clarifier No. 2



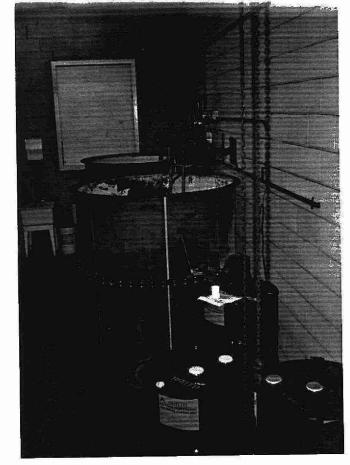
20. Clarifier No. 2 - Submerged Collector Pipes



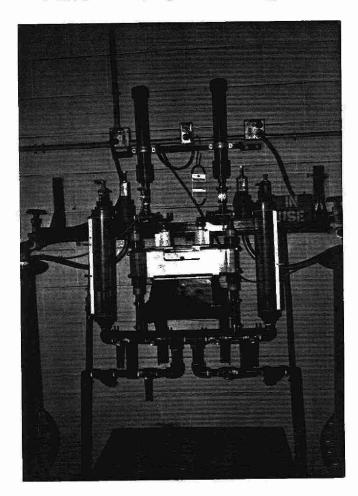
21. Clarifier No. 2 - Drive Unit



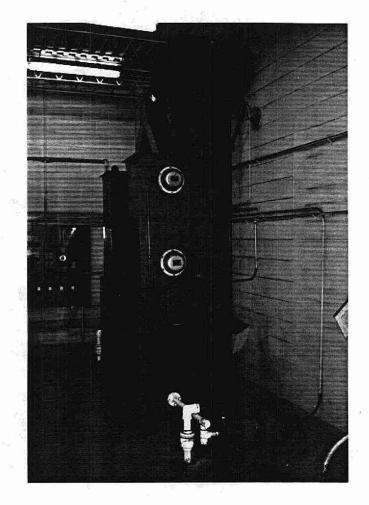
22. Liquid Alum and Polymer Pumps (Note Calibration Chambers)



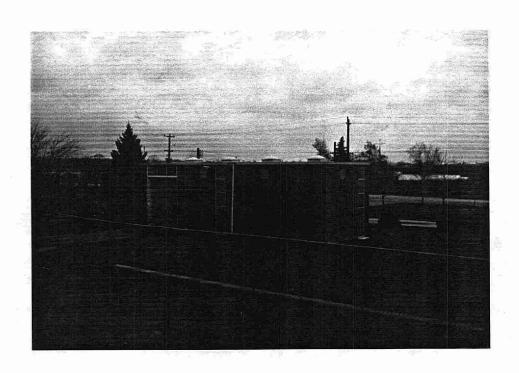
23. Polymer Mixing and Storage Tanks



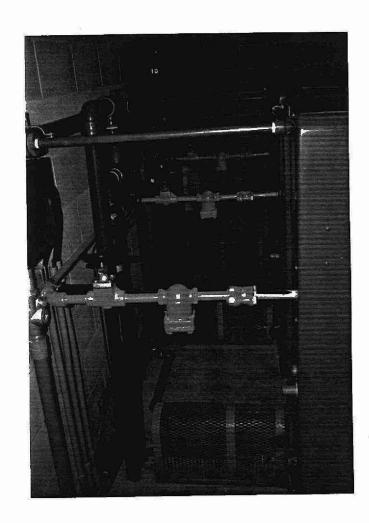
24. Polymer Feed Pump and Piping Arrangement



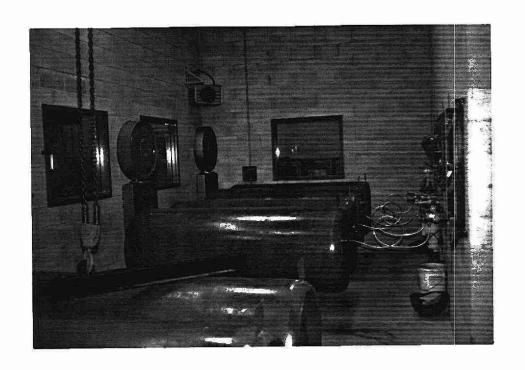
25. Activated Carbon Feeders and Feed Pump



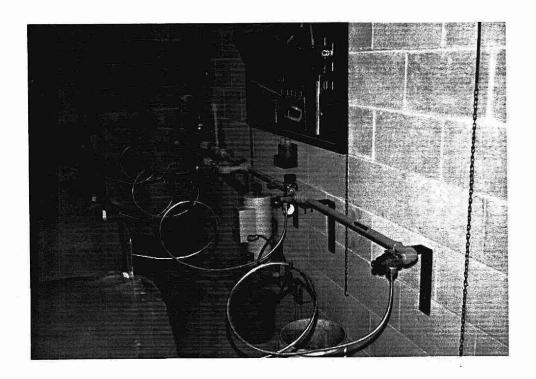
26. Chlorine Building



27. Chlorination Piping



28. Chlorine Cylinder Storage Area



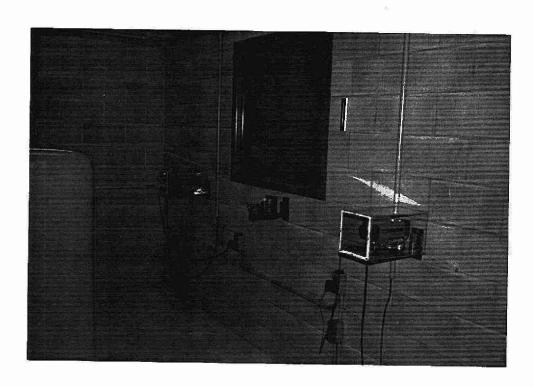
29. Chlorine Cylinder Manifold and Chlorine Gas Detector



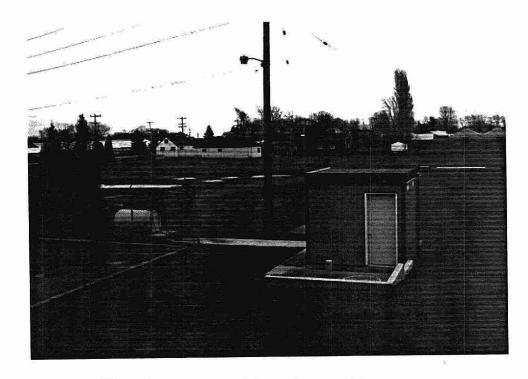
30. Chlorine Cylinder Scale



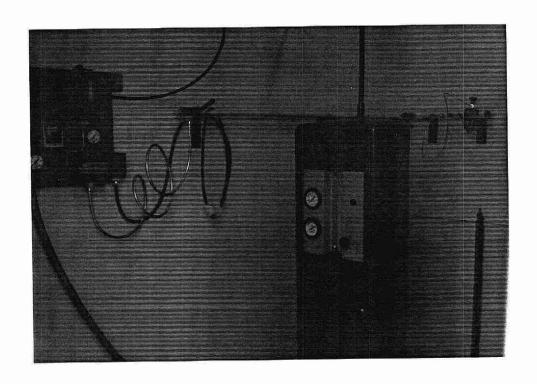
31. Chlorinators



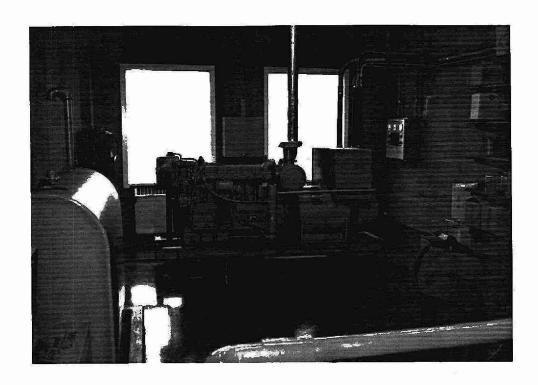
32. View Showing Television Cameras (Image of chlorinator rotameter transmitted to main control panel)



33. Emergency Chlorine Building



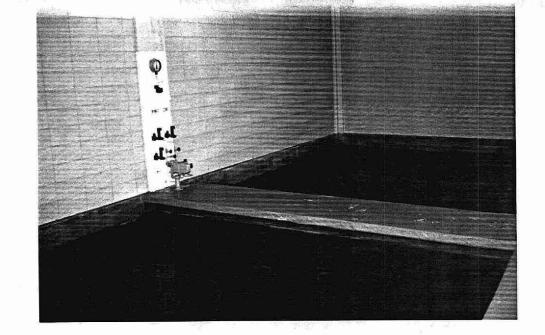
34. Emergency Chlorinators



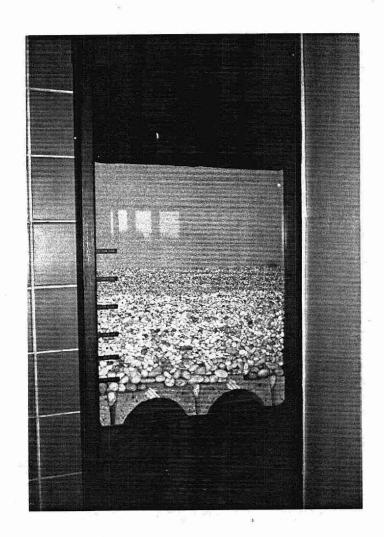
35. Diesel Engine Generator Set



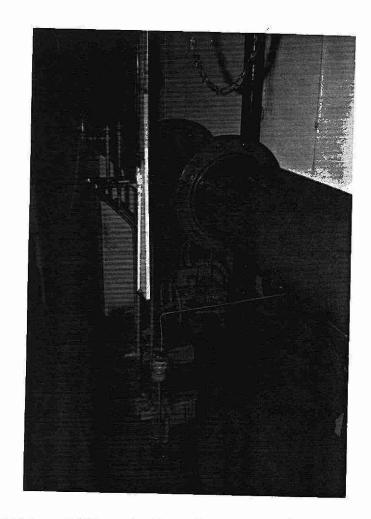
36. Filter Area



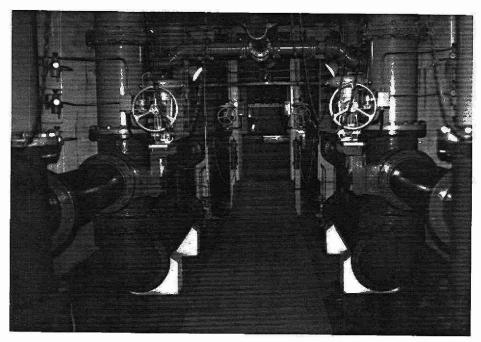
37. Top of Filter



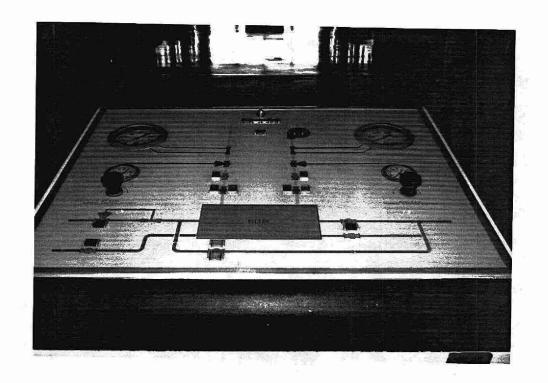
38. Display Case Showing Filter Media and Underdrains



39. Filter Effluent Flow Measuring Instrumentation



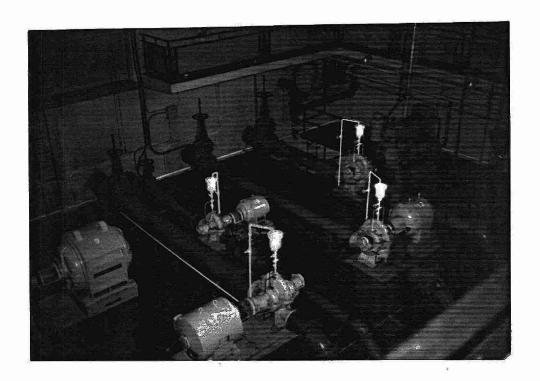
40. Filter Pipe Gallery



41. Filter Backwash Control Console



42. High Lift Pump Room



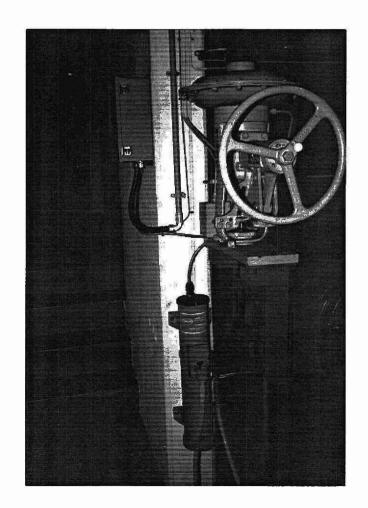
43. High Lift Pump Room



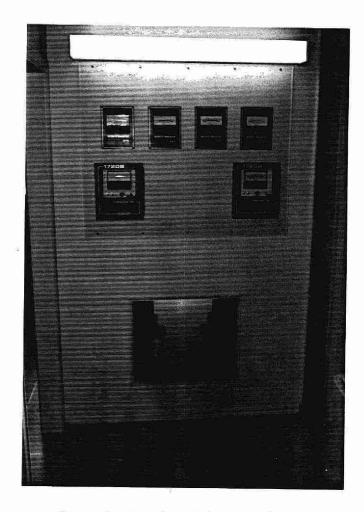
44. High Lift Pumps



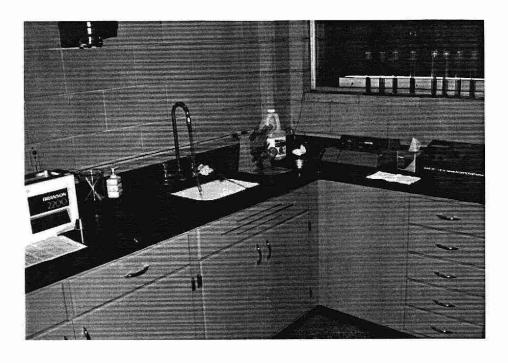
45. High Lift Pump Discharge Header



46. Filter Effluent Turbidimeter



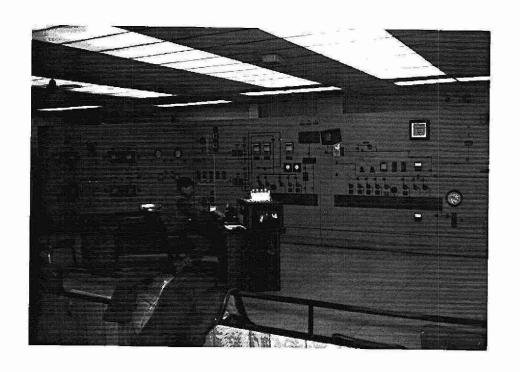
47. Turbidity Display Panel



48. Laboratory



49. Display Jars



50. Master Control Panel

SECTION D PLANT OPERATION

D.1 Flow Control

The plant is operated manually with the ultimate controlling factor being the depth of water in the Leamington elevated water tank. High lift pumps are selected and started and stopped manually to maintain a depth of water in the tank between 6 and 8 metres (20 and 26 ft).

In response to the water level in the clear well and underground storage reservoirs, the plant operator will determine how many filters should be in operation and their flow rate settings. In addition to clear well and storage reservoir levels, the selection of filters also depends on the raw water flow, clarifier effluent and filtered water quality.

Except for the winter months, two clarifiers are in operation with the flow equally divided between them. The clarifier effluent from Clarifier No. 1 is collected through orifices in launders located at the water surface which creates problems during winter operation. Clarifier No. 2 has submerged collectors and because one clarifier is able to treat winter flows, only Clarifier No. 2 is in operation during the winter.

Both of the plant microstrainers are in operation at all times except for periods of maintenance during January and February.

Low lift pumps are turned off and on manually from the main control panel and pumps are selected for operation to meet the requirements of the filter flow rates. Flow splitting between the two clarifiers is accomplished by the adjustment of butterfly valves in the raw water supply piping.

D.2 Chemical Dosage Control

a) Alum

Liquid alum is pumped to the clarifier influent with chemical metering pumps. Alum dosage is determined from past experience and jar tests are carried out when raw water conditions do not allow determining proper dosage based on past

experience. Alum feed rates are adjusted manually whenever there is a change in raw water quality or flow. Each time the alum feed rate is changed, the operator verifies proper feed rate by the time-displacement method using the calibration chamber on the chemical feed pump. In addition, the feed rate is verified at the end of every shift from the total measured amount of alum used during the shift and the total volume of raw water treated.

b) Polymer

Alchem 8171-SC is used as a coagulant aid and is stored as a liquid in drums. Polymer is mixed in day tanks to a 0.1% concentration and is fed to the clarifier influent by chemical metering pumps. The required dosage is based on a very intensive jar testing program. Feed rates and dosages are altered and checked in the same manner as for alum.

c) Taste and Odour Control

Powered activated carbon (Hydrodarco B) is fed to the clarifier influent by a system incorporating a volumetric screw feeder, mixing tanks and slurry pumps. The water supply to the mixing tank run and the slurry pumps continuously. The plant operator manually activates the system every half hour, and the screw feeder runs for a time manually set to correspond to the raw water flow. Carbon is fed at a dosage of 2 mg/L. The volumetric feeder is calibrated every two months and periodic determination of dosage is made from the total carbon used and the total raw water flow for the same period.

d) Disinfectant

The chlorine storage and feed systems are in a separate building. Pre-chlorination chlorine is fed to the clarifier effluent to maintain a total chlorine residual of 0.20 to 0.25 mg/L in the filter effluent. Post-chlorination chlorine is fed at the inlet to the high lift pump suction well (clearwell) to maintain a total residual of 0.75 to 0.80 mg/L in the water leaving the plant. Chlorine feed rates are adjusted manually from the main control panel from which location the operator can view

the chlorinator feed rates via closed circuit television. Chlorine residual testing is performed 4 times per shift.

Daily chlorine dosage is reconciled by using the weight of chlorine used each shift and the total volume of water pumped during the same period.

D.3 Filter Backwashing Procedure

Filter backwashing is initiated manually and is manually carried out from the filter operating consoles. The decision to backwash is based on a combination of filter head loss, filter effluent turbidity and length of filter run. Under normal circumstances, the following criteria have been developed to ascertain when backwashing should be performed:

Head loss not to exceed 2.13 m (7 ft)

Effluent turbidity not to exceed 0.20 NTU

Length of filter run not to exceed 100 hours

During the summer months, the governing factor is usually head loss. During the fall, filter effluent turbidity and/or head loss govern backwashing and in the winter and spring, backwash is usually initiated on the basis of the length of the filter run. During peak flow periods in the summer, all the filters are backwashed daily during the low demand hours at night.

During backwashing, the main backwash water flowrate is increased slowly and then the surface agitators are turned on and operate for 1 to 2 minutes. Main wash is continued for an additional 5 to 7 minutes until the backwash water is clean. Although the capability exists, filtering to waste after backwashing is not practised at the plant. Plant management indicates the initial turbidity after backwashing is higher but clears quickly.

D.4 Filter Maintenance

Each filter is taken out of service annually and inspected for mudballs and media shifting. The surface agitator nozzles are examined and unplugged if required. Before being put back into service, the filter is backwashed slowly to remove entrapped air. All drains, inlets

and outlets are closed and 70% calcium hypochlorite (HTH) is added to the water on top of the filter to achieve approximately a 30 mg/L total chlorine residual. The filter drain is then opened to allow the chlorinated water to permeate the media. After 24 hours the filter is backwashed until the chlorine residual approaches normal levels. The high-residual chlorinated water is dechlorinated prior to discharge to drain.

The plant has a "filter peeker" which allows observation of the filter media at depth during backwashing. Additional anthracite is added as required to maintain proper depth.

A maintainence program entails the cleaning of the raw water wet well annually. The clariflers are drained and cleaned every two years. The microstrainers are drained and cleaned with 12% sodium hypochlorite on a monthly basis. The microstrainers are also chemically cleaned with Alchem 1010 annually.

SECTION E PLANT PERFORMANCE

E.1 Particulate Removal

a) General

The records indicate that particulate removal at the Union Water Treatment Plant is excellent. The following table indicates the treated water turbidity was 0.60 FTU or lower for over 99% of the time during the three year study period.

| Turbidity Less Than | Percent of Time | |
|---------------------|-----------------------------|--|
| or Equal to | (Aug. 1983 to July 1986) | |
| (FTU) | | |
| 0.10 | 33.1 | |
| 0.15 | 70.5 | |
| 0.20 | 83.4 | |
| 0.25 | 89.3 | |
| 0.30 | 92.4 | |
| 0.40 | 95.9 | |
| 0.50 | 98.2 | |
| 0.60 | 99.1 | |

The treated water turbidity exceeded the Ontario Drinking Water Objective of 1.0 FTU on only two days during the study period. This occurred on January 4th and 5th, 1984 and is attributed to increased flows after the Christmas/New Year holiday period compounding the normal problems of winter clarifier operation (see below). Plant staff reacted by implementing the use of a filter aid and corrected the problem.

Since the beginning of 1986, the plant has operated under the instructions of the Regional Manager of Utility Operations to maintain a treated water turbidity of 0.20 FTU or lower. The following table, prepared from plant records for the first six months of 1986, indicates compliance with the instructions imposed on the plant.

| Turbidity Less Than | Percent of Time | |
|---------------------|-----------------------------|--|
| or Equal to | (Jan. 1986 to July 1986) | |
| (FTU) | | |
| 0.10 | 59.9 | |
| 0.15 | 95.3 | |
| 0.20 | 100 | |

The data indicates a significant improvement in particulate removal in 1986 compared to data for the three year study period. Plant records for the period August 1986 to December 1986 indicate daily turbidity did not exceed 0.20 FTU.

The improved removal has been accomplished by:

- More frequent filter backwashing
- Reducing filter loading rate, when possible, by placing more filters in operation for a given flow rate.
- Less concern about minimizing chemical costs.
- Installation of continuous turbidity indicating equipment which allows taking quicker corrective action.

b) Clarification

The average daily raw water turbidity ranged from 121.6 FTU to 1.2 FTU as follows:

| Turbidity Less Than | Percent of Time % | |
|---------------------|----------------------|--|
| or Equal to | | |
| (FTU) | | |
| 122 (Maximum) | 100 | |
| 90 | 99 | |
| 50 | 96 | |
| 30 | 92 | |
| 20 | 86 | |
| 15 | 80 | |
| 10 | 69 | |
| 5 | 38 | |
| 1.2 (Minimum) | ·- | |

Coagulant (alum) dosage averaged 19 mg/L ranging from 11 mg/L to 78 mg/L. Average coagulant aid dosage was 0.15 mg/L ranging from 0.05 mg/L to 0.50 mg/L. Clarifier effluent turbidity ranged from 0.15 FTU to 6.76 FTU averaging 1.1 FTU.

Problems in operating the clarification system occur during the winter months. The cold water/low raw water turbidity capacity of one clarifier is marginally adequate for winter demands. However, if both clarifiers are kept in operation, the low hydraulic loading results in severe icing conditions which presents the potential for damaging the mechanisms. In addition, the surface collection launders on Clarifier No. 1 freeze-up. In order to overcome this problem, baffles are installed temporarily to raise the water level and the launders are covered. Clarifier No. 2 has submerged collectors and, being more suitable for winter operation, has been the duty clarifier for winter operation since it was constructed in 1970.

Because of increased water demand, both clariflers were kept in operation during the winter of 1986-87 with the previously mentioned modifications made to Clarifler No. 1. The higher flows and mild winter minimized icing problems.

During non-freezing weather, both clariflers are in operation each treating one-half the total raw water flow. The major problem is that wind induced currents can upset Clarifler No. 2. Because of the surface launders, this does not occur in Clarifler No. 1.

Aluminum residuals and pH test results were examined in an attempt to assess the efficiency of coagulation/flocculation. Unfortunately, several factors make it somewhat difficult to assess the data. Firstly, pH determinations were not made prior to June 1986. In addition, from January 7, 1986 to April 3, 1986, one clarifier was in operation and polyaluminum chloride was used as the coagulant. From April 4, 1986 to June 23, 1986 both clarifiers were in operation with polyaluminum chloride used as the coagulant for one clarifier and alum for the other.

Aluminum residuals were recorded for the effluent of each clarifler and the plant effluent. The plant piping does not allow discharging the effluent from a specific clarifler to any particular filter, since the effluents of the clariflers are mixed in the common filter inlet channel. Plant staff performed numerous jar tests during the polyaluminum chloride trial and experimented with different dosage rates. It was concluded that the polyaluminum chloride was more effective than alum in treating cold water and produced comparable results on the warmer water in the latter stages of the trial period. Alum has been used since the end of the trial period and no decision has been taken to use polyaluminum chloride on a continuous basis.

The records indicate aluminum residuals in plant effluent ranged from 0.01 mg/L to 0.21 mg/L during the three year study period. The residual averaged 0.06 mg/L and was 0.10 mg/L or less for 90% of the time. Assuming the aluminum residual in the raw water is very low, (no data available) it would appear the aluminum residual, at times, is higher than expected. It is difficult to assess the data since aluminum residuals on clarifier effluent and plant effluent are determined at the same time at approximately one week intervals. Thus, the clarifier effluent results

cannot be compared with plant effluent because of the residence time in the reservoirs. Aluminum testing on filter effluent would allow a better evaluation of the nature of the aluminum.

It appears, however, that aluminum residual in the plant effluent can be almost as high as in the clarifier effluent which would indicate the aluminum is in solution and not a precipitate.

During June and July 1986, the period of record for pH measurements, the pH of the raw water averaged 8.15 ranging from 7.75 to 8.40. Plant staff recently provided the following two sets of pH values at the locations indicated:

| Raw Water Clarifier Mixing Zone Clarifier Effluent | 8.08 7.54 7.53 | 8.34 7.53 7.38 |
|--|----------------------|----------------------|
|--|----------------------|----------------------|

The pH of the raw water is lowered by alum addition and mixing with previously formed floc but it approaches, and perhaps sometimes exceeds, the recognized upper pH limit for optimum coagulation with alum.

The conclusion that the aluminum in the plant effluent is in solution could be deduced as follows:

- The pH is low enough to allow aluminum to go into solution.
- The plant effluent aluminum residual is in the same range of values as clarifier effluent.
- Precipitated aluminum should be removed by filtration and settling in the reservoirs and therefore, the aluminum in the plant effluent should be lower than in the clarifier effluent.

It is understood that 0.10 mg/L maximum aluminum concentration has been established as a process-related objective for drinking water.

It is recommended that a testing and evaluation program be set up to determine the nature of the aluminum in the clarifler and plant effluent and investigate alternatives for lowering the pH. The program could be as follows:

- Make pH determination on raw water, clarifler mixing zone, clarifler effluent, filter effluent and plant effluent.
- 2. On the same set of samples as in (1) above, test for aluminum residual.

The tests should be done daily for at least one week's duration at different times of the year to obtain data representative of the raw water quality and temperature conditions that can occur. The plant records seem to indicate higher pH values in the summer months which could be indicative of algal activity and tests should be made during this period.

if it is found that the aluminum is in solution and its concentration in the plant effluent must not exceed 0.10 mg/L, additional testing will be required to determine the most effective way of reducing its concentration.

A major factor affecting particulate removal in a solids contact up-flow clarifier is sludge management. At the Union Plant the clarifiers have sampling ports (4 in Clarifier No. 1, 5 in Clarifier No. 2) to the draft tube and reaction zone. Samples are taken on weekdays. The samples are allowed to settle for 10 minutes in 100 ml graduated cylinders. From the results of the settling tests, together with other factors such as time of year, water temperature, flow rate, etc., plant staff is able to determine the appropriate sludge blow-down sequence. Sludge blow down is initiated manually every hour or half-hour depending on the amount of sludge produced. Initiation of blow-down opens the sludge blow-down valve and starts a timer. When the timer times out the valve closes and the timer resets. The timer is set to maintain suitable sludge blanket conditions. The level of the sludge blanket is determined visually during the summer. During the winter, ice prevents visual observation and the approximate sludge blanket elevation is determined from the sampling points noted above. In addition to indicating the condition of the sludge, samples from the draft tube give guidance regarding the selection of turbine

speed. Decisions regarding sludge blow-down cannot be based on a hard-and-fast set of rules. They are more properly made based on the operator's familiarity with the past performance of the system under varying conditions. The Union staff seems to be able to manage the clarifier sludge satisfactorily. The installation of sludge blanket level detectors and making provision for more easily obtaining sludge samples would be an asset.

As mentioned earlier, coagulant and coagulant-aid dosages and feed rates are adjusted manually. Plant management feels this gives the operation staff some responsibility, an incentive to learn about the processes and make independent decisions regarding their operation. The rigorous data recording system keeps the operators active and in constant touch with the plant operation. This has merit in that it keeps the operator interested in his job which tends to discourage production of a lackadaisical effort.

During March of 1987, a streaming current monitor was installed for a two week trial. While the device reacted to varying raw water conditions, it has not as yet been determined if the benefits of the equipment justify its high cost (ie. approximately \$10,000).

Because the clarifiers are not covered, they are affected by weather conditions and it is doubtful if improvements could be made in clarifier operation to significantly reduce the particulate matter in the plant effluent.

c) Filtration

Figures 8 and 9 show typical filter performance. Figure 6 indicates a marked increase in effluent turbidity when the flow was increased after approximately 55 hours of filter run. An increase in flow earlier in the run did not affect effluent turbidity significantly.

Since filter effluent turbidity is recorded hourly, the expected peak in turbidity after placing a backwashed filter into operation is not registered. On March 5th, 1987, a test was run on Filter No. 1 to track effluent turbidity after placing a recently backwashed filter into operation.

UNION WATER TREATMENT PLANT

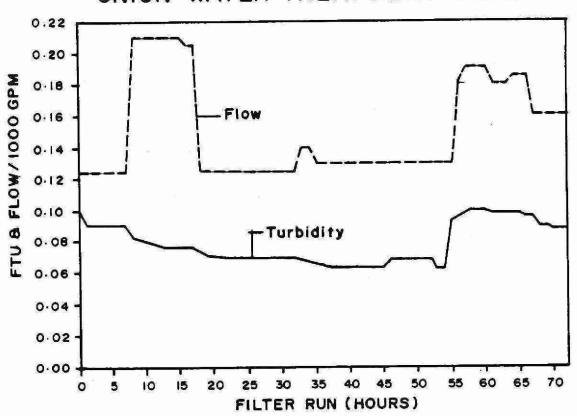


FIGURE 8 - Filter Performance July 19-22, 1988

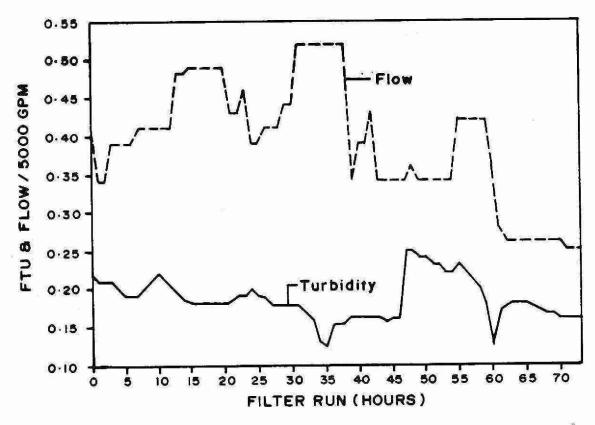


FIGURE 9 - Filter Performance Aug. 14-17, 1988

Filter No. 1 was taken out of service after a run of 60.5 hours. The effluent turbidity at the end of the run was 0.06 FTU. Each half of the filter was backwashed in the normal manner. The turbidity of the water in the filter at the completion of backwashing was 3.2 FTU in one half and 2.1 FTU in the other half.

After placing the filter into operation, turbidity readings were taken at 1 minute intervals for 50 minutes and at 1 hour intervals thereafter until termination of the filter run 56 hours later. Filtering rate was 6.79 m/h (2.3 gpm/sq ft) for the first 33 hours of the filter run and 4.53 m/h (1.54 gpm/sq ft) thereafter.

Figure 10 shows the test results graphically. The discontinuity in the turbidity curve at 50 minutes is a reflection of the change from turbidity readings being taken every minute to every hour. It can be seen that the effluent turbidity increased from 0.078 FTU to a maximum of 0.16 FTU 13 minutes into the filter run. From 13 minutes to 50 minutes the rate of decrease in turbidity dropped considerably and was reasonably constant from 50 minutes to the end of the run.

During the first 50 minutes of filter run (ie. 1.46% of the total filter run) approximately 3.1% of the total turbidity load is produced giving a turbidity load/run time ratio of 2.12. The average ratio for the remainder of the run was 0.95 if the first 50 minutes of the filtered water was wasted, the total turbidity load for the filter run would be reduced by only 1%.

However, in the initial stages of the filter run, before the filters have ripened, the filter will permit material to be flushed out. Turbidity, bacteria and other contaminants will pass through the filter and it would seem prudent to reduce the initial turbidity even though its contribution to the total turbidity load is small.

Taking optimizing particulate removal to mean making it as perfect as possible, the following could be considered to achieve that objective.

UNION WATER TREATMENT PLANT

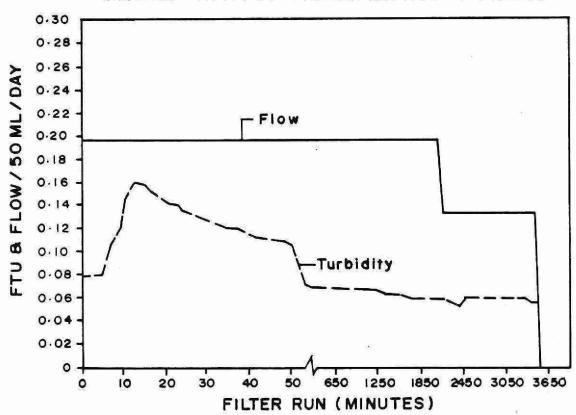


FIGURE 10 - Filter Performance Mar. 5-7, 1987

a) Filtering to Waste

The previously described test indicates a peak in filter effluent turbidity which could be eliminated from the plant effluent by filtering to waste for 30-50 min. after placing a backwashed filter into operation.

Additional tests should be done to confirm the presence of the turbidity peak under different filter flow rates and filter influent conditions. The highest initial turbidity readings will probably occur during the high demand period in summer months and the reduction in plant capacity resulting from filtering to waste might not be tolerable.

b) Filter Flow Control

It is recommended that changing filter flow rates during a filter run be minimized and that increasing filter flow when the filter is well into its run be avoided. When flow adjustments are required, the should be made gradually.

Filtering at a low rate for a time after placing a backwashed filter into operation could be effective in reducing the initial turbidity peak.

c) Backwash Water Conditioning

The literature suggests that in some locations, the addition of polymer to the backwash water results in a reduction of the initial turbidity after placing a backwashed filter into operation. Tests would have to be done to determine the effectiveness of this procedure and the most suitable type and dosage of polymer.

d) Filter Aid

The use of a polymer, injected into the filter influent stream would probably reduce effluent turbidity. Again, testing would have to be done to

determine the effectiveness of using a filter aid type of polymer and dosages required. The reduction in plant capacity resulting from shorter filter runs and more frequent backwashing that would likely occur with the use of a filter aid would cause problems during high demand periods.

e) Backwash Duration/Rate

Increasing the backwash water flow rate and/or the duration of backwashing might be effective in reducing the initial turbidity although a dramatic improvement would probably not be realized.

However, the backwash water flow rate could not be increased without raising the top of the wash water troughs to prevent excessive loss of anthracite media.

E.2 Disinfection

Plant practise is to feed chlorine into the clarifier effluent to maintain a total chlorine residual of 0.20 to 0.25 mg/L in the filter effluent. Post-chlorination is carried out to maintain 0.75 to 0.80 mg/L total chlorine residual in the plant effluent as directed by the Regional Manager of Utility Operations.

Chlorine demand tests are not carried out and only total chlorine residual is determined.

Prior to 1985 05 07 chlorine was added to the clarifier influent. At that time there was concern about the formation of Trihalomethane compounds and the application point for pre-chlorination was changed to the clarifier effluent. Examination of the WPOS Water Quality - 4 Year Summary Table (Page 5) indicates a substantial reduction in Trihalomethanes in 1986 as compared to previous years. The total average values for 1986, 1984 and 1983 were 29, 48.7 and 54 respectively. In addition to reduction of trihalomethanes, the change in application point for pre-chlorination reduced the chlorine dosage by approximately 50% with no serious effect on the treatment process. The only detrimental effect was a slight increase of algae growth in the clarifiers.

Table 7.0 - Bacteriological Testing indicates the absence of coliforms in all samples of water leaving the plant during the study period. The plant superintendent advised an occasional sample from the distribution system has had a positive test result. Most of these occurrences can be attributed to particular events such as watermain repairs being made just prior to sampling. Since watermain maintenance is the responsibility of the various municipalities served by the Union Water Treatment Plant, the Union Plant staff, who collect the samples, might not be aware of watermain repairs being made. Whenever positive tests are obtained, resampling and testing are done immediately and to date there has not been a situation that would indicate inadequate disinfection at the plant has resulted in positive bacteriological test results in the distribution system.

It can be concluded therefore, that the plant is capable of disinfecting the water to ensure a water quality as described in the Ontario Drinking Water Objectives (M.O.E.).

In the normal mode of operation, filter effluent discharges to Reservoir No. 1 (9090 m³ or 2 mil gal). Reservoir No. 1 discharges to Reservoir No. 2 (13,636 m³ or 3 mil gal) and Reservoir No. 2 discharges through a pipe to the Clearwell (High Lift Pump Suction Well). Both reservoirs are baffled such that short circulating is minimized. At peak pumping rates of 95.5 ML/d (21 mgd), the detention time in the reservoirs is 5.7 hours when they are full and 3.8 hours at low level. During periods of low demand, detention time in the reservoirs could approach 24 hours.

The application point for post-chlorination is upstream of a baffle at the inlet to the clearwell. This is not ideal in that even if complete mixing of chlorine in the incoming flow is achieved, the detention time in the clearwell is only 7.2 minutes at peak pumping rates. For water pumped by the pump nearest the inlet, the detention time would be negligible.

Since chlorine residual of the water entering the clearwell is not determined prior to postchlorination, it is not possible to determine the loss of chlorine residual through the reservoirs.

The plant does not have facilities for measuring the weight of chlorine used for pre and post-chlorination separately and the chlorine dosages in Tables 3.0 and 3.1 are estimated values. The sum of the dosages does not necessarily reflect the actual total chlorine used due to inaccurate flow measurement.

The plant has two chlorine weigh scales each accommodating two 0.9 tonne (2,000 lb) containers. The containers are connected to a common manifold which serves the three chlorinators. It would be feasible to duplicate the manifold such that the containers on one scale would feed the pre-chlorinator and the containers on the other scale would feed the post-chlorinator. The manifolds would be interconnected and valved to allow flexibility of operation. This modification would allow accurate recording of pre and post-chlorination dosages.

It is recommended that the water upstream of the clearwell be tested for chlorine residual. This would allow determination of loss of chlorine residual through storage.

This information could be used to determine the feasibility of increasing pre-chlorination dosages such that post-chlorination could be eliminated or reduced to overcome the inadequacy of the post-chlorination application point. This would have to be considered carefully since increased chlorine applied to the clarifier effluent could cause corrosion of the building materials enclosing the top of the filters and the equipment in the space. (ie. aluminum curtain wall, light fixtures, copper tubing, etc.).

The water does not appear to be aggressive or present significant taste, odour or other problems that would warrant an investigation of alternate forms of disinfection.

SECTION F RECOMMENDATIONS

The report indicates particulate removal and disinfection at the plant are very good and any modifications would probably result in only minor improvements. However, the following could be considered for implementation. A plant expansion program is presently underway and the long term modifications should be included in that program.

F.1 Short Term Modifications

- Expand the aluminum testing program to determine if pH correction of the raw water is warranted to improve treatment and/or reduce aluminum residual in the plant effluent.
- Modify operational procedures to evaluate the effectiveness of the following on particulate removal.
 - a) Filter to waste after backwashing.
 - b) Filter to waste after backwashing in conjunction with adding a polymer to the backwash water during the latter stages of backwashing.
 - c) Continue to evaluate the use of a filter aid on a continuous basis.
 - d) Continue to experiment with varying backwash flows and durations.
 - e) Consider the use of slow opening valves on filter backwash.
 - Continue to carry out yearly filter inspections and chlorination of filter media.
- 3. To obtain accurate amounts of chlorine used for pre and post-chlorination the chlorine gas piping could be reworked and additional equipment installed to allow weighing the chlorine used for pre and post-chlorination separately. The cost of the work would be approximately \$5,000.00.
- 4. At the present time the chlorine residual of the water entering the clearwell is not determined. To obtain a sample for testing would require tapping the clearwell inlet pipe in the valve chamber and installing a pump and piping to allow obtaining a sample at a convenient location at an estimate cost of \$2,000.00.

5. Implement a flowmeter calibration program.

F.2 Long Term Modifications

Clarifier sludge sampling is presently a two man task since plant staff must enter a
confined space to obtain samples. An improved sampling system would reduce
manpower requirements, eliminate a potentially dangerous task and would
probably result in more frequent sampling and testing.

The sample piping could be extended from the clarifier blow-down chambers to the basement under the microstrainers. This would involve difficult excavation in confined areas with interfering underground piping, especially for Clarifier No.2. Consideration could be given to using a sonic or photo-electric unit to indicate sludge blanket level.

- Streaming current meters could be installed to optimize coagulant dosages. There might be some difficulty in arranging for suitable coagulant feed and streaming current meter sampling locations to ensure a properly mixed sample is obtained. If only minor piping modifications are required the work would cost approximately \$25,000.00. It is recommended that use of this equipment be considered for the future to allow for more detailed assessment of its value at this plant and in the waterworks industry generally.
- Upgrading of flow measuring and recording system should be undertaken in future plant expansion to replace existing obselete equipment.
- 4. Consideration should be given in future plant expansion to incorporate a Distributed Programmable Logic Control System to provide automatic process control, alarms, operator interface, automatic data collection, storage, display, trending and generation of hardcopy reports.
- 5. Consideration should be given to covering the clarifiers to:
 - Eliminate wind induced currents which affect clarifier performance.
 - Eliminate or reduce the formation of ice.

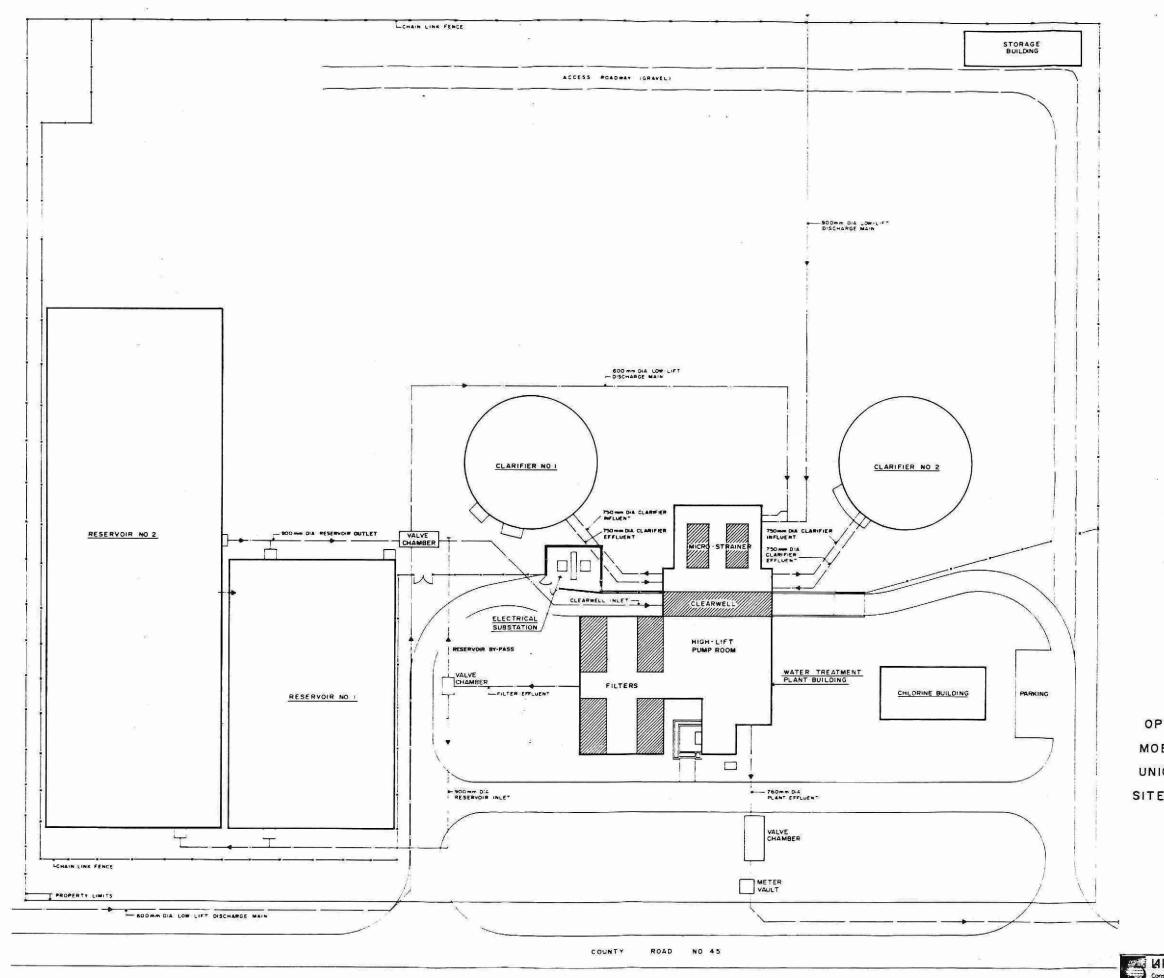
- Provide protection from airborne contaminants.
- Allow easier maintenance, cleaning and painting of mechanisms during off peak seasons when weather conditions prevent such work in the open.
- 6. Improvements should be made to eliminate the "bottleneck" in the filter inlet/outlet piping that restricts filtration rate.
- 7. Provide instrumentation for continuous analysis of plant effluent chlorine residual and turbidity.
- 8. Rectify problem of deficient post-chlorination contact time.
- Carry out sieve analyses regularly to determine the extent (if any) of media degradation.

APPENDIX A DRAWINGS

Figure 3 - Site Plan

Figure 4 - Block Schematic

Figure 5 - Process Flow Diagram (3 sheets)

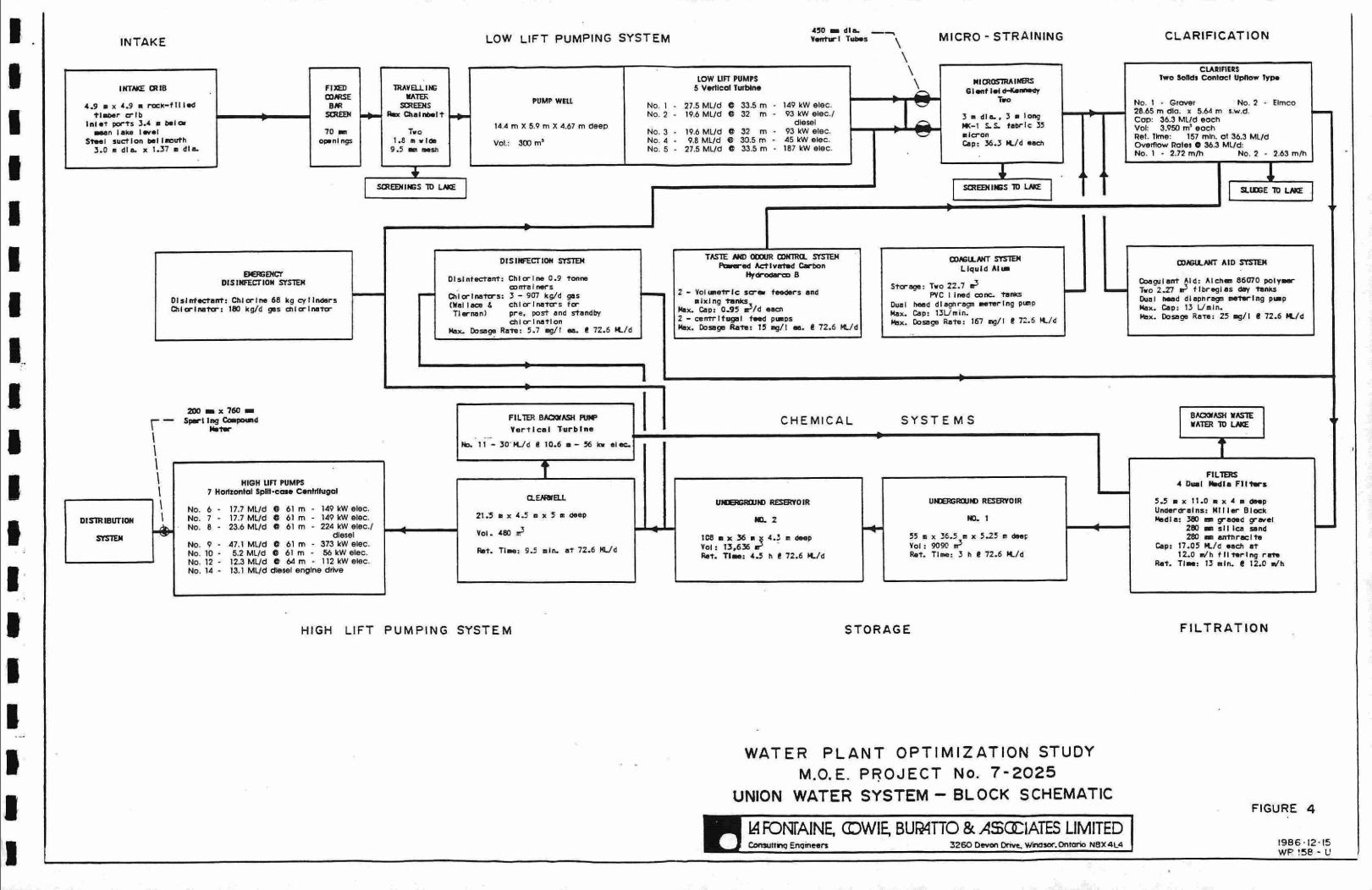


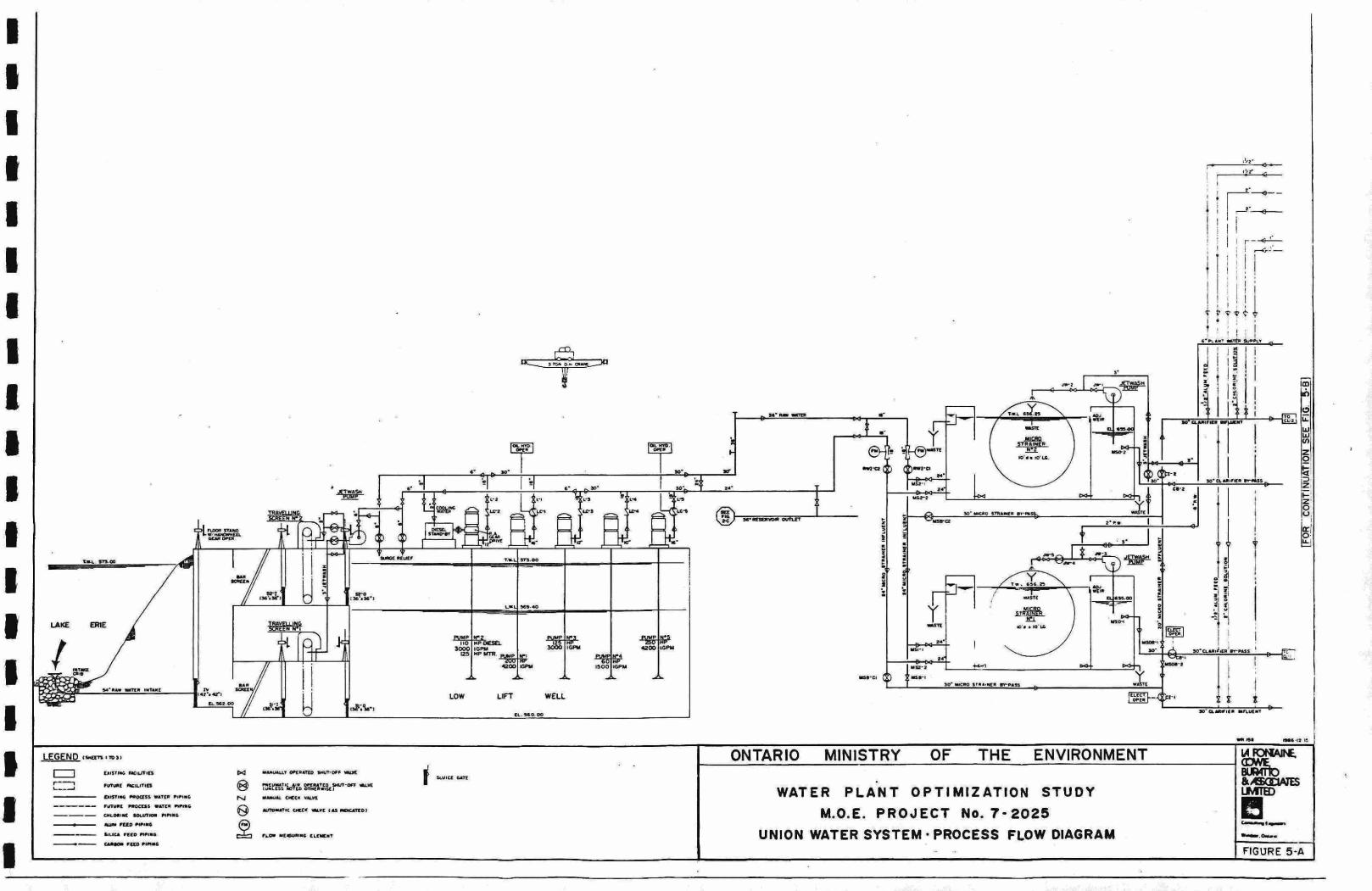
STATION TREATMENT PLANT LEAMINGTON

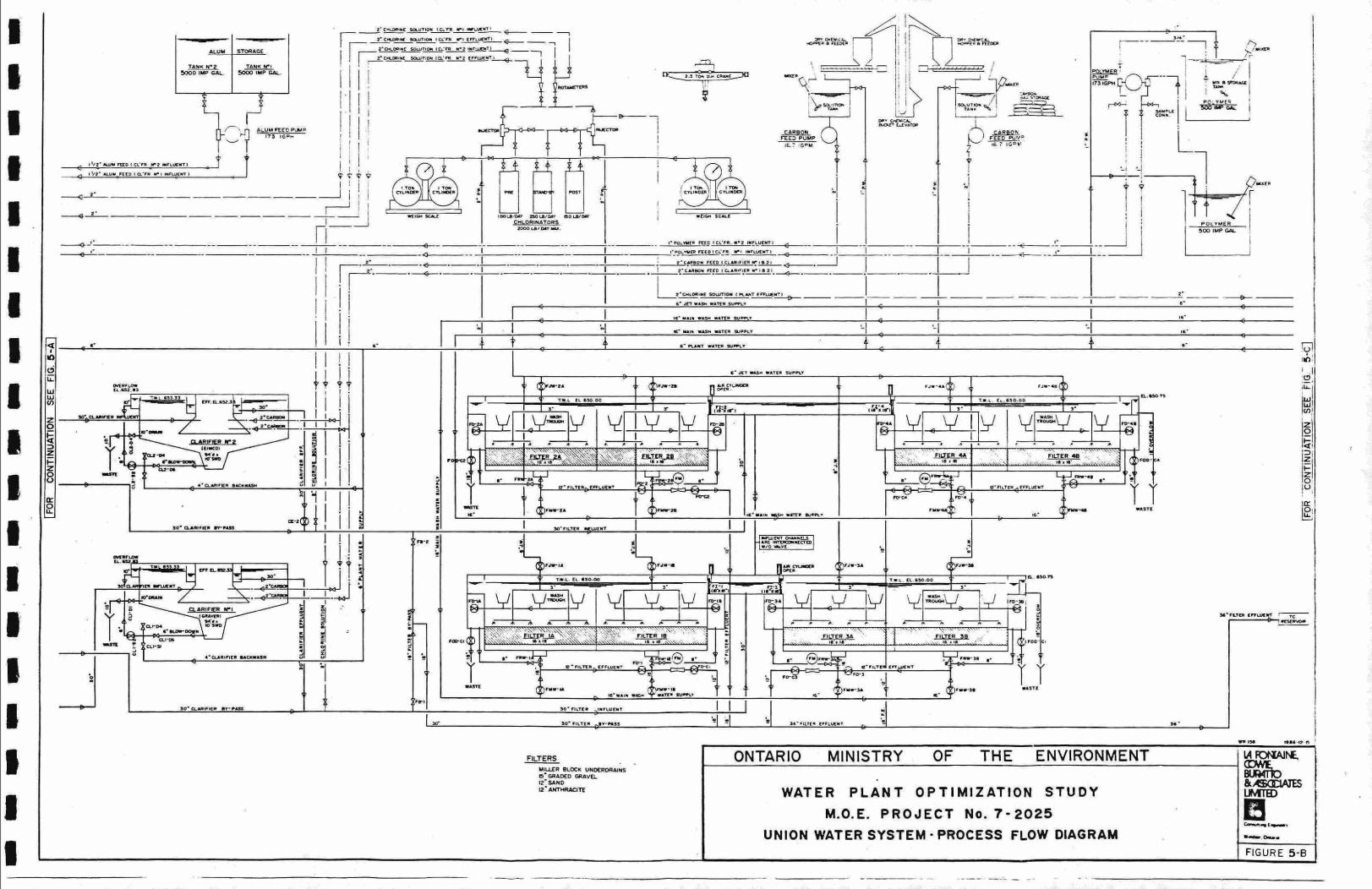
LOCATION PLAN

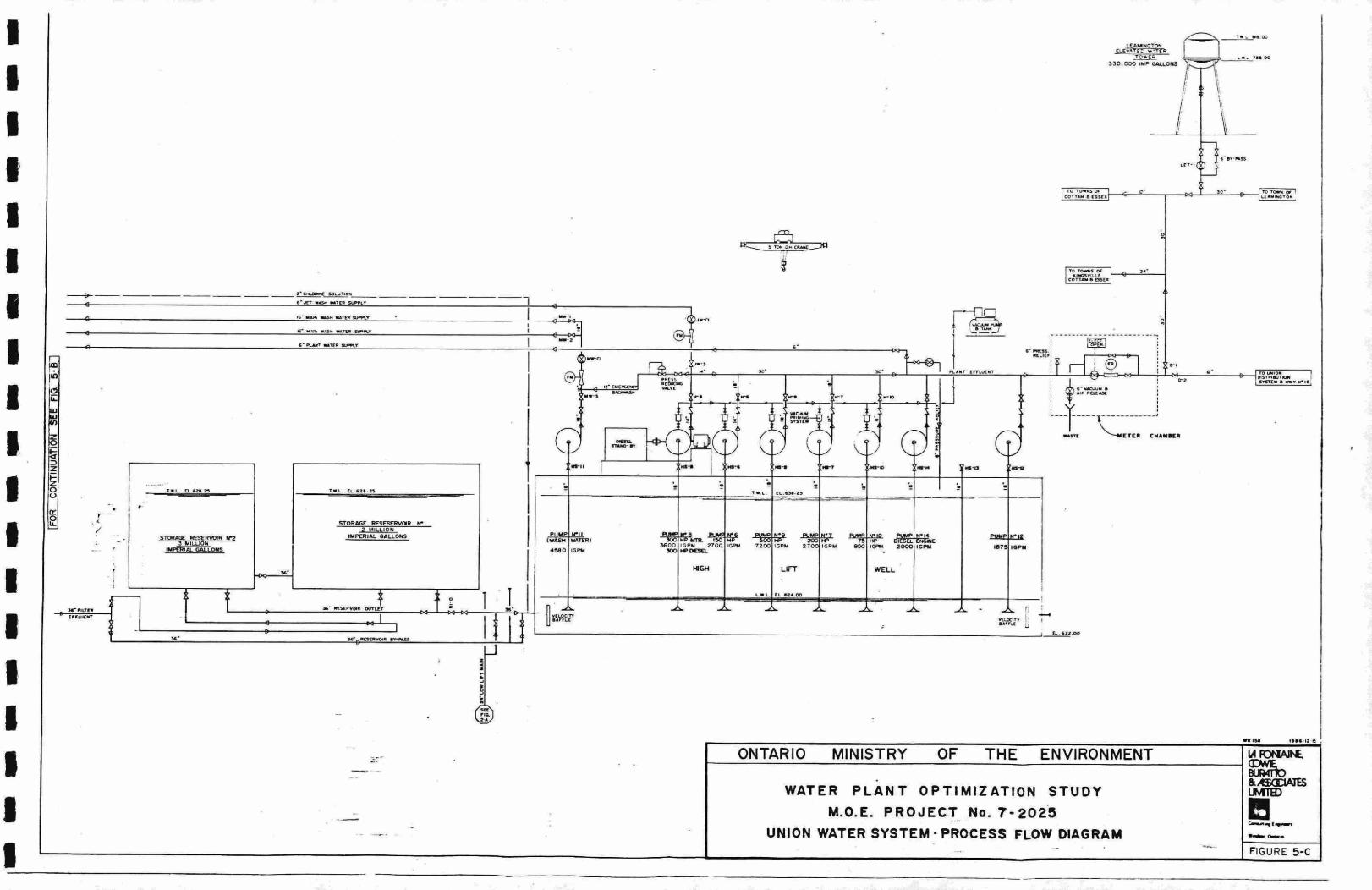
WATER PLANT OPTIMIZATION STUDY MOE PROJECT NO. 7-2025 WATER SYSTEM SITE AND LOCATION PLANS

FIGURE 3









APPENDIX B PLANT LOG SHEETS

- 1. Daily Summary
- 2. Operators Data Input Sheets
- 3. Operators Log
- 4. Laboratory Report
- 5. Chemical Usage

UNION WATER SYSTEM - DAILY SUMMARY | ! High | ! No.1 | Loss | No.2 | Loss | No.3 | Loss | No.4 | Loss | Tank | | Clear | Lift | High Lift | Low Lift | Filter | of | Filter | of | Filter | of | Filter | of | Kings | | Time | Level | Pres. | Well | Flow | Pumps | Pumps | Flow | Head | Flow | Head | Flow | Head | Flow | Head | Tank | Shift No.1 Operator: _____ Coag: _____ Polymer: ____ H2O Temp. Chlorine: 02:00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 05:00 | _____| ____| ____| 06:30 1 08:00 | ____|___|___| Filter Runs: 1 Hours ! Hours ! Hours ! Hours H2O Temp. ____ Chlorine: Shift No.2 Operator: Coag: Polymer: 11:00 | _____| _____| _____| _____| _____| _____| ____| 11:30 | _____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | 12:00 | _____ 12:30 | _____|____| 15:00 1 15:30 1 16:00 | _____| Filter Runs: | Hours ! Hours ! Hours ! Shift No.3 Operator: Coag: Polyaer: H2O Teap. Chlorine: 17:30 | _____| ____| _____| 20:30 | ______ 21:00 | _____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ___ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | _____ | ____ | ____ | ____ | ____ | ____ | _____ | ____ | _____ | _____ | _____ | ____ | ____ 21:30 | _____| ____| ____| 22:00 : 23:00 | | | | | | | | 23:30 |_____1 24:00 | Filter Runs: 1 Hours ! Hours ! Hours ! Davi Dates Hours

ONTARIO MINISTRY OF THE ENVIRONMENT UNION WATER SYSTEM

Operators Data Input Sheet

| Period: From To . | |
|-------------------|--|
|-------------------|--|

| DATE | Sun. | Mon. | Tues. | Wed. | Thurs | Fri. | Sat. |
|--|------|------|-------|------|-------|------|------|
| RAW WATER | | | | | | | |
| temperature raw flow(mgd) raw avg. turb. | | | | | | | |
| CLARIFIERS | | | | | | | |
| clar. #1-avg. turb. clar. #2-avg. turb. | | | | | | | |
| FILTERS | | | | | | | |
| <pre># filters in use avg. filt. run(hrs) backwash usage(mgd) avg. filt. effluent turb.</pre> | | | | * | 6 | | 8 |
| TREATED WATER | | | | | | | |
| treated flow(mgd) max. hr. rate(gpm) treated avg. turb. max. treated turb. | | | | | | | |
| CHEMICALS | | | | | | | |
| alum used(gals) carbon dosage(ppm) polymer # of batches chlorine used(lbs.) pre-residual(ppm) post-residual(ppm) | | | | | | | |
| post-max. residual(ppm) post-min. residual(ppm) | | | | | | | |

REMARKS:

| ł i | OPERATERS LOG . Date: | I I |
|---------------|---|---|
| ŀ | Weather: | |
| 1 | Temperature High: Low: Present: | ! · · · · · · · · · · · · · · · · · · · |
| 1 | Precipitation: | l I |
| 1 | Wind:Lake: | |
| | Number 1 Meter Reading | ₹ [|
| 1 | Present: | |
| 1 | Previous: | |
| <u>t</u> | H.L. Flow: | |
| | | |
| į | OPERATERS LOG Date: | |
| İ | | |
| [| Weather: Temperature | ! ! |
| 1 | High: Low: Present: | |
| Î | Precipitation: | |
| | Wind: Lake: | |
| i | number 1 neter Reading | |
| ŀ | Present: | |
| i i | Previous: | |
| ! ! | H.L. Flow: | |
| | | · |
| Í | OPERATERS LOG Date: | |
| l | Meather: | |
| l L | Temperature High:Low: Present: | |
| l f | Precipitation: | |
| ľ ľ | 4 | |
| | Wind: Lake: : Number 1 Meter Reading : | |
| i | | |
| i l | Present: | y 51 |
| ! | Previous: | · · · · · · · · · · · · · · · · · · · |
| 1 | H.L. Flow: | |

| | NOINU | NATER SYS | STEM | | | | | | | | .90 | Laborato | ry Report | |
|---|-------|-----------|------------|-----------|--------|----------|---------|--------|-----------|-----------|----------|----------|-----------|---------------|
| | C1 2 | (ag/l) | | | | Turbidit | y (NTU) | | | | | р | н | L.L. |
| Time | Pre | Post | Raw | Clar 1 | Clar 2 | Filt (| Filt 2 | filt 3 | Filt 4 | C.Filt | Syst | Raw | Sys | Flow (GPH) |
| | Oper. | | a (0) | | Shift | No: I | 00:01 - | 08:00 | , | | | | | |
| 00:01 01:00 02:00 03:00 04:00 05:00 06:00 07:00 | | | | | | | | | | | | | | |
| | Oper. | | ·-, | | Shift | No: 2 | 08:00 - | 16:00 | | • | | | | |
| 08:00 09:00 10:00 11:00 12:00 13:00 14:00 14:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 | Oper. | | | | Shift | No: 3 | | 24:00 | | | | | | |
| | Cla | rifier No | o.1 - Slu | udge Samp |) l es | | | Cla | rifier No | o.2 - Slu | udge Sam | ples | | |
| Tine | # \ | 1 2 | # 3 | # 4 | Flow | Depth | | # 1 | # 2 | 1 3 | # 4 | 15 | Flow | Depth |
| Day; | | | | | | | | | | | | | | |

CHEMICAL USAGE ************

| Date: | Date: Raw | NORTH TANK - 810 GA SOUTH TANK - 786 GA | | d . | % | SHIFT 1 00:00 2 08:00 3 16:00 | - 16:00 | |
|--|--|---|---|--|--|--|--|------------|
| Raw ALUN Raw ALUN Raw ALUN Raw ALUN Pres Prev Pres ALUN: Mg/1 ALUN | Raw | | | | 2 | Ĭ * | 3 | |
| Prev | Prev | Raw | ALUM | ; Raw | ALUM | Raw | ALUM | |
| Prev | Prev | Pres P | .6A | Pres | frev | i Pres | Prev | |
| Use | Use | Prev P | es | Prev | Pres | Prev | Pres | |
| DAILY CHEMICAL USE: Sam Flow: ALUM USED: gais. ALUM DOSAGE RATE: mg/l | DATE ALUM USED: Gais. ALUM DOSAGE RATE: mg/] | | e | | Use | Use | Use | |
| Date: | | DAILY CHEMICAL USE: | М: | mg/1 1 | ALUM:ag/1 | ¥ × | ALUM: | Ĭ. |
| Date: Raw | Date: Raw | Fion: | ALUM USED: | gais. | ALUM DOSAGE RATE: | mg/] | | |
| Raw | Raw | Datas | | - 1 | 2 | k K | 2 | |
| Pres Prev Pres Use Us | Pres Prev Use Us | Raw | ALUM | . Raw | ALUM | Raw | ΔΕΙΙΉ | |
| Prex Pres Prev Pres Prev Pres Use Use Use Use Use Use SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: ALUM: ALU | Prev Pres ! Prev Pres ! Prev Pres Use Use Use Use Use SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: ALUM: ag/l ALUM: ag/l DAILY CHEMICAL USE: RAW ALUM USED: gals. ALUM DOSAGE RATE: ag/l Flow: ALUM USED: gals. ALUM DOSAGE RATE: ag/l Date: I 2 3 Raw ALUM USED: Prev Prev Prev Pres Prev Pres Prev Pres Prev Pres SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: BALUM: ag/l ALUM: ag/l BALUM: ag/l ALUM: <td>PresP</td> <td></td> <td></td> <td>Lie</td> <td></td> <td>6</td> <td></td> | PresP | | | Lie | | 6 | |
| Use | Use | Prev P | | : Prev | A | 1 Prev | | |
| SHIFT DOSE: SHIPT DOSE: | SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: ALUM: ag/l ALUM: ALUM ALUM: ALUM: | Use | e | 1 Use | Use | i Use | Use | |
| DAILY CHEMICAL USE: Raw Flow: ALUM USED: gals. ALUM DOSAGE RATE: mg/1 1 | DAILY CHEMICAL USE: Raw Flow: | | 122 | AND THE PERSON OF THE PERSON O | | : SHIFT DOSE: | | |
| | | DAILY CHEMICAL USE: | In: | mg/l i | ALUM: mg/l | ŧ. | ALUM: | A |
| Date: | Date: | | ALUM USED: | gals. | ALUH DOSAGE RATE: | | | |
| Raw ALUM Raw ALUM Raw ALUM Raw ALUM | Ram | into | 1 | | 2 | F | 3 | |
| Raw ALUM Raw ALUM Raw ALUM Raw ALUM | Ram | Date: | • | \$ | | L | | |
| Prev Prev Pres Prev Pres Use Use Use Use SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: ALUM: ag/l ALUM: ag/l DAILY CHEMICAL USE: Raw Flow: ALUM USED: gals. ALUM DOSAGE RATE: ag/l 1 2 3 | Prev Pres Prev Pres Use Use Use Use SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: ALUM: mg/l ALUM: ALUM: DAILY CHENICAL USE: BALUM USED: gais. ALUM DOSAGE RATE: mg/l Raw ALUM USED: gais. ALUM DOSAGE RATE: mg/l Date: 2 mg/l Date: Raw ALUM Raw Pres Pres Pres Prev Pres Prev Prev Pres Pres Use Use Use SHIFT DOSE: SHIFT DOSE: | Raw | ALUH | Y Same | Eq. 2250 | | ALUM | |
| Use Use Use Use Use SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: ALUM: ag/l : ALUM: ag/l : ALUM: DAILY CHEMICAL USE: Raw Flow: ALUM USED: gals. ALUM DOSAGE RATE: ng/l | Use | | | | ALUM | Raw | MCUA | |
| SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: ALUM: | SHIFT DOSE: Pres P | .6A | Pres | ¥ | Pres | 1000-00-00-00-00-00-00-00-00-00-00-00-00 | |
| ### ALUM: | ALUM: mg/l ALUM: mg/l ALUM: mg/l ALUM: DAILY CHEMICAL USE: Ram ALUM USED: gals, ALUM DOSAGE RATE: mg/l 3 3 3 3 3 3 3 3 3 | Prev P | 'es | Pres | Prev Pres | Pres Prev | Prev | |
| DAILY CHEMICAL USE: Raw Flow: ALUM USED: gals. ALUM DOSAGE RATE: mg/l 1 | DAILY CHEMICAL USE: Raw Flow: ALUM USED: gals. ALUM DOSAGE RATE: mg/l 1 | Prev P | 'ey | Pres Prev Use | Prev | Pres Prey Use | Prev Pres | |
| Flow: ALUM USED: gals. ALUM DOSAGE RATE: mg/l | | Prev P Use U SHIFT DOSE: | ey es se | Pres Prev Use SHIFT DOSE: | Pres Use | Pres Prey Use | Pres Use | |
| 2 ; 3 | | Prev P. Use U SHIFT DOSE: AL DAILY CHEMICAL USE: | ey es se | Pres Prev Use SHIFT DOSE: | Pres Use | Pres Prey Use | Pres Use | 4 |
| | Date: ! Raw ALUM ! Raw ALUM ! Raw ALUM Raw ALUM Prev Prev <td>Prev P. Use U SHIFT DOSE: AL DAILY CHEMICAL USE: Ram</td> <td>ey es se</td> <td>: Pres : Prev : Use : SHIFT DOSE:</td> <td>Prev Pres Use ALUM:ag/1</td> <td>Pres Prev Use SHIFT OOSE:</td> <td>Pres Use</td> <td>n -</td> | Prev P. Use U SHIFT DOSE: AL DAILY CHEMICAL USE: Ram | ey es se | : Pres : Prev : Use : SHIFT DOSE: | Prev Pres Use ALUM:ag/1 | Pres Prev Use SHIFT OOSE: | Pres Use | n - |
| | Date: Raw ALUM Raw ALUM Raw ALUM Raw ALUM Raw ALUM Raw ALUM Prev ALUM Prev ALUM Raw ALUM Prev Prev< | Prev P. Use U SHIFT DOSE: AL DAILY CHEMICAL USE: Ram | ey es se | : Pres : Prev : Use : SHIFT DOSE: | Prev Pres Use ALUM:ag/1 | Pres Prev Use SHIFT OOSE: | Pres Use | 0 - |
| Date: | Raw ALUM Raw ALUM Raw ALUM Pres Prev Prev Prev Prev Prev Prev Prev Prev Prev Prev Pres Use Use Use Use SHIFT DOSE: SHIFT DOSE: SHIFT DOSE: | Prev P. Use U SHIFT DOSE: AL DAILY CHEMICAL USE: Ram | esUM:ALUM USED: | : Pres : Prev : Use : SHIFT DOSE: | Prev Pres Use ALUM: ag/l ALUM DOSAGE RATE: | Pres Prev Use SHIFT OOSE: | Pres | ŋ · |
| Raw ALUM : Raw ALUM : Raw ALUM | Prev Pres ! Prev Pres Use ! Use ! Use ! Use SHIFT DOSE: ! SHIFT DOSE: ! SHIFT DOSE: | Prey P. USE: SHIFT DOSE: AL DAILY CHEMICAL USE: Ram Flow: | es se JM: ALUM USED: | : Pres : Prev : Use : SHIFT DOSE: | Prev Pres Use ALUM: ag/l ALUM DOSAGE RATE: | Pres Prev Use SHIFT OOSE: | Pres | Ď. |
| | Use Use Use Use SHIFT DOSE: SHIFT DOSE: | Prev P. USE: USHIFT DOSE: AL DAILY CHEMICAL USE: Ram Flom: Date: Ram | ALUM USED: | Pres Prev Use SHIFT DOSE: gals. | Prev Pres Use ALUM: ag/1 ALUM DOSAGE RATE: | Pres Prev SHIFT OOSE: mg/l | Prev Pres Use ALUM: | n - |
| | SHIFT DOSE: SHIFT DOSE: | Prev P. USE: USHIFT DOSE: ALDAILY CHEMICAL USE: Ram Flom: Ram Pres P | ALUM USED: | Pres Prev Use SHIFT DOSE: gals gals | Prev Pres Use ALUM: ag/l ALUM DOSAGE RATE: 2 ALUM Prev | Pres Prev Use SHIFT OOSE: Ram Pres | Prev Pres Use State Stat | P |
| Use Use Use | | Prev P. USE: SHIFT DOSE: AL DAILY CHEMICAL USE: Ram Flow: Date: Raw Pres P. Prev P. | ALUM USED: ALUM ALUM EV ALUM EV | Pres | Prev Pres Use ALUM: ag/l ALUM DOSAGE RATE: 2 | Pres Prev Use SHIFT DOSE: Ram Pres Prev | Prev Pres | p - |
| Production of the second of th | ALIMA COLL NUMBER COLL DE COLLEGE | Prev P. USE: SHIFT DOSE: AL DAILY CHEMICAL USE: Ram Flow: Raw Pres P Prev P Use U | ALUM USED: ALUM ALUM EV ALUM EV | Pres | Prev Pres Use ALUM: ag/l ALUM DOSAGE RATE: 2 | Pres Prev Use SHIFT OOSE: Ram Pres Prev Use | Prev Pres | p - |
| | DAILY CHEMICAL USE: | Prev P USE U SHIFT DOSE: AL DAILY CHEMICAL USE: Raw Flow: Raw Pres P Prev P USE U SHIFT DOSE: U | ALUM USED: ALUM ALUM Se ALUM Ses ALUM | Pres | Prev Pres Use ALUM: ag/l ALUM DOSAGE RATE: 2 ALUM Prev Pres Use | Pres Prev Use SHIFT OOSE: Ram Pres Prev Use SHIFT DOSE: | Pres Use | 0 |
| DAILY CHEMICAL USE: | Ram Flow: ALUM USED: gals. ALUM DOSAGE RATE: mg/l | Prev P. USE: SHIFT DOSE: AL DAILY CHEMICAL USE: Ram Flom: Ram Pres P. P. P. VSE USHIFT DOSE: AL DAILY CHEMICAL USE: | ALUM USED: ALUM ALUM Se ALUM Ses ALUM | Pres | Prev Pres Use ALUM: ag/l ALUM DOSAGE RATE: 2 | Pres Prev Use SHIFT OOSE: Ram Pres Prev Use | Prev Pres | |

APPENDIX C DATA TABLES

| TABLE NO. | DESCRIPTION |
|-----------|--|
| 1.0 | Flows (1 page) |
| 1.1 | Daily Flows (4 pages) |
| 2.0 | Particulate Removal Summary (4 pages) |
| 2.1 | Particulate Removal Profile - 1983 (5 pages) |
| 2.1 | Particulate Removal Profile - 1984 (12 pages) |
| 2.1 | Particulate Removal Profile - 1985 (12 pages) |
| 2.1 | Particulate Removal Profile - 1986 (7 pages) |
| 3.0 | Disinfection Summary (4 sheets) |
| 3.1 | Disinfection Profile - 1983 (5 pages) |
| 3.1 | Disinfection Profile - 1984 (12 pages) |
| 3.1 | Disinfection Profile - 1985 (12 pages) |
| 3.1 | Disinfection Profile - 1986 (7 pages) |
| 4.0 | T & O Control Alkalinity |
| | Adj. & Fluoridation Summary (3 pages) |
| 4.1 | T & O Control Alkalinity |
| | Adj. & Fluoridation Profile - 1984 (6 pages) |
| 4.1 | T & O Control Alkalinity |
| | Adj. & Fluoridation Profile - 1985 (8 pages) |
| 4.1 | T & O Control Alkalinity |
| | Adj. & Fluoridation Profile - 1986 (7 pages) |
| 5.0 | WPOS Water Quality (4-year Summary) (17 pages) |
| 6.0 | Algae Count (3 pages) |
| 7.0 | Bacteriological Testing (4 pages) |
| 8.0 | Alert Levels (Distribution System) (1 page) |
| 8.1 | Alert Levels (Treated Water at Plant) (1 page) |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 1.0: FLOWS (ML/d)

| | 1 | | 1986 | Î | | 1985 | | ı | | | 1984 | 18 | | 1983 | |
|---|--------------|------|----------|--------|--------|------|------|----------|----------|-----|------|------|------|--------|-----------|
| | 1 | MAX. | MIN. | AVG. I | MAX. | MIN. | I AV | /G. | MAX. | Ì | MIN. | AVG. | MAX. | MIN. | AVG. |
| V | IRI | 27.6 | 19.3 (| 22.9 | 25.8 | 13.1 | 1 4 | 20.6 | 27.6 | 1 | 19.4 | 23.3 | | 1 | l |
| | TI | 28.8 | 15.9 | 24.2 | 26.8 | 15.6 | | 22.5 | 30.4 | 1 | 16.9 | 25.1 | Ĭ | Ĭ I | Ì |
| | 1-1- | | | | | | | | | - 1 | | | | | |
| 3 | IRI | 29.6 | 19.2 | 22.5 | 26.8 | 20.1 | 1 : | 22.1 | 26.9 | 1 | 12.8 | 21.8 | l | 1 | l |
| | 111 | 28.1 | 16.9 1 | 23.6 | 30.0 [| 16.9 | 1 : | 23.7 | 28.0 | 1 | 16.7 | 23.5 | | | l ' |
| | - - R | 28.0 | 19.1 | 22.4 | 28.5 | 11.4 | 1 | 21.7 | 28.4 | 1 | 14.8 | 22.1 | | 1 | |
| | TI | 30.8 | 1 17.7 1 | 24.1 | 29.3 | 16.7 | - | 23.2 | 29.6 | 1 | 17.0 | 24.1 | Ĺ | 3 | ĺ |
| | 1-1- | | L [| | | | . | | | - 1 | Î | | | 1 | |
| | IRI | 38.0 | 19.3 | 26.4 | 36.8 | 17.1 | 1 | 25.4 | 27.3 | 1 | 13.0 | 21.0 | I | 1- | ı |
| | TI | 36.1 | 1 19.2 | 28.2 | 41.1 | 17.5 | 1 : | 27.5 | 28.1 | 1 | 16.5 | 23.6 | | ļ | ļ |
| | 1-1- 1R1 | 42.8 | 20.6 | 33.3 | 44.3 | 20.5 | 1 | 33.7 | 33.0 | - 1 | 15.2 | 26.1 | | 1 | |
| | 1 T (| 43.6 | 22.0 | 35.3 | 46.6 | 23.6 | | 36.2 | 35.8 | 1 | 19,2 | 29.0 | ľ | 1 | l |
| | 1-1- | | | | | | · i | j | | - 1 | | | | Ī | |
| | IRI | 38.3 | 20.6 1 | 31.3 | 49.1 | 15.9 | 1 : | 32.2 | 50.0 | 1 | 20.7 | 34.6 | ľ. | 1 | i |
| | T | 42.1 | 19.6 | 33.5 | 52.7 [| 18.4 | 1 | 34.8 | 51.9 | I | 22.0 | 36.9 | | | l |
| | - - R | 55.8 | 21.1 | 40.7 | 58.8 | 21.7 | 1 | 41.0 | 68.3 | | 24.9 | 45.9 | | 1 | l |
| | T | 57.3 | 25.9 | 43.1 | 58.8 | 23.2 | 1 | 43.5 | 67.1 | 1 | 26.5 | 47.7 | | Į. | ļ |
| | - - R | | [] | | 61.6 | 21.2 | 1 | 42.9 | 56.0 | - 1 | 21.1 | 42.2 | 53.1 | 20.2 | 38. |
| | T | | i i | į | 61.6 | 22.1 | | 45.1 | 58.6 | Ī | 22.5 | 43.8 | 57.0 | 22.0 | 40. |
| | - - R | | [] | | 63.4 | 23.2 | · | 43.2 | 55.0 | - 1 | 19.0 | 42.0 | 57.1 | 16.8 | 41. |
| | T | | į i | ì | 60.8 | 24.8 | i . | 45.6 | 55.5 | 1 | 23.5 | 44.4 | 56.1 | 1 19.9 | 44. |
| | - - R | | | [| 42.6 | 15.1 | | 28.5 | 44.1 | - 1 | 14.4 | 28.9 | 37.0 | 17.9 | 27. |
| | T | | i i | ì | 45.1 | 17.8 | | 30.8 | 46.5 | 1 | 17.5 | 30.7 | 38.5 | 1 17.6 | 29. |
| | 1-1- | | [] | | 31.6 | 12.7 | | 23.5 | 29.4 | - 1 | 12.5 | 23.3 | 31.3 | 13.8 | 23 |
| | R T | | 1 | 1 | 31.0 | 16.6 | | 25.6 | 31.3 | 1 | 16.9 | 25.8 | 31.0 | 1 17.6 | 25. |
| | 1-1- | | | [| 27.7 | 12.0 | | 19,8 | 22.9 | - 1 | 9.3 | 16.9 | 28.9 | 11.3 | 20 |
| | R T | | 1 1 | 1 | 28.3 | 17.0 | | 21.1 | 25.1 | 1 | 15.4 | 19.1 | | 1 15.0 | 20. |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 1.1: DAILY FLOWS (ML/d) 1983

| AY I | | JAN | | 1 | FES | ķ | | l | MAR | | I | 2 | APR | į. | MA | ¥ | | 9 | JUN | | ķ | JUL | | 1 | A | IG | | 1 | SEP | | 1 | OCT | يسرن | 1 | NOV | | 1 0 | EC | ا استنت | l Da |
|------|---|-----------|---|-----|-----|-----|---|----|-----|---|-----|---------|-----|-------|----|-----|-----|---|-----|---|-----|-----|---|-----|------|-----|-------|----|---------|-------|------|-------|-------|-----------------|------|-------|--------|---------|------------|----------|
| 1 | R | 1 | T | ı | R | 1 | T | Ĺ | R I | T | r i | Ŗ. | i i | . (| R | ï | 2 1 | R | į. | T | l. | R i | 1 | T I | R | t | T | į. | R (| 7 | 1 | R I | T | I R | Ì | 7 | į R | 1 | T | i i — |
| DN I | | ı | | ì | | 1 | - | l | ı | | 1 | 3230007 | 1 | 3.0 | | ŀ | 1 | | 1 | | Ŀ | i | | 1 | 21.5 | 0 1 | 26.00 | Ĭ | Ī | | 1 | 1 | | 1 | F | | 1 | 1 | i | 1 19 |
| E I | | i | | .01 | | ı | | t | 1 | | 1 | | 1 | 1 | | i | 1 | | 1 | | 1 | 1 | | 1 | 35.6 | 0 1 | 36.70 | 1 | I | | f | 1 | | 1 25.6 | 1 0 | 31.00 | 1 | 1 | 1 | 1 2 |
| D I | | 1 | | Ä. | | 1 | | i | ī | | 1 | | 1- | 1 | | i. | 4 | | 1 | | 1 | ā | | T | 38.5 | 0 1 | 39.70 | 1 | 1 | | 1 | 1 | | 1 31.3 | 1 01 | 29.70 | 1 | 1 | 1 | 1 |
| 10 [| | ï | | 1 | | 1 | | i | Ĭ | | 1 | | 1. | 1 | | 1 | .1 | | 1 | | 1 | 1 | | | 31.0 | 0 [| 34,60 | | 45.80 [| 49.30 | I | 1 | | 1 26.7 | 10 1 | 29.10 | 21.5 | 0 26 | 3.30 | k. |
| 1 1 | | ŧ | | 1 | | 1 | | k | E | | 1 | | 1 | 1. | | l. | 1 | | 1 | | 1 | l | | 1 | 34.2 | 0 1 | 34.30 | Ĩ | 51.50 | | | 1 | | 125/2/earnesono | | 28.40 | | | | |
| T | | | | 1 | | 1 | | 1 | 1 | | 1 | | 1 | 1 | | ï | 1 | | 1 | | t | 1 | | 1 | 27.5 | 0 1 | 29.00 | 1 | 50.40 | 52.70 | 1 29 | .00 1 | 27.40 | 1 21.2 | 50 I | 21.00 | 1 19.2 | 0 20 |).10 | 1 |
| ן ומ | | ¥ | | 1 | | 1 | | Ĭ | 1 | | 1 | | 1 | 1 | | ji. | A | | 1 | | 1 | J | | Į. | 22.2 | 0 1 | 24.90 | 1 | 32.20 | 35.40 | 18 | .80 [| 22.50 | 18.8 | 1 01 | 17.60 | 1 11.3 | 0 16 | 5.50 | Į. |
| ON I | | Ŷ | | 1 | | ī | | 1 | i | | 1 | | 1 | 1 | | 1. | 1 | | 1 | | 1 | 1 | | 1 | 37.5 | 0 1 | 36.60 | 1 | 49.60 | 54.80 | 1 33 | .40 1 | 35.60 | 1 22.5 | 0 1 | 26.50 | 1 23.2 | 0 29 | 1.00 | 1 |
| DE 1 | | 1 | | 1 | | 1 | | 1 | - 1 | | 1 | | į | 1 | | i. | 1 | | 1 | | i | 1 | | i | 39.0 | 0 1 | 43.00 | 1 | 57.10 | 54.60 | 1 34 | .20 [| 38.50 | 1 24 .: | 1 04 | 26.70 | 28.9 | 0 28 | 1.00 | i |
| ED I | | 4 | | į. | | 1 | | ı | 1 | | 1 | | 1 | Y | | A. | 4 | | 1 | | 1 | 1 | | ı | 37.1 | 0 1 | 37.10 | 1 | 46.20 | 48.10 | 1 32 | .50 | 33.70 | 1 27. | 1 01 | 30.10 | 1 26.6 | 0 27 | 1.90 | ľ |
| 10 | | ı | | 1 | | i | | î | 1 | | 1 | | 1 | 1 | | | 1 | | 1 | | 1 | 1 | | 1 | 28.5 | 0 1 | 30.20 | 1 | 47.20 | 50.10 | 1 37 | .00 1 | 35.80 | 1 26.0 | 1 08 | 26.50 | 1 24.2 | 0 1 27 | 1.10 | ı |
| 1 1 | | 1 | | 1 | | 1 | | T | 1 | | Į. | | 1 | 1 | | Ĵ | 3 | | 1 | | 1 | j | | 1 | 31.4 | 0 1 | 33.90 | Ť | 50.00 | 54.60 | 1 32 | .20 1 | 34.60 | 1 21.6 | 1 01 | 19.80 | 1 20.5 | 0 1 27 | 1.30 | Į |
| T I | | 1 | | f | | 1 | | E | 1 | | 1 | | -T | 1 | | T. | 1 | | 1 | | 1 | . 1 | | -1 | 30.5 | 0 | 29.00 | T | 48.80 | 52.40 | 1 21 | .00 | 21.00 | 1 18.5 | 1 06 | 18.90 | 1 22.6 | 0 19 | 3.90 | 1 |
| N I | | 1 | | 1 | | i | | 4 | 1 | | f | | JL | 1 | | 1 | 1 | | 1 | | 1 | | | 1 | 20.2 | 0 | 22.00 | 1 | 34.40 | 34.40 | 1 18 | .60 | 18.90 | 1 13.6 | 1 06 | 18.90 | 17.5 | 0 17 | 1.20 | 1 |
| ON J | | 1 | | 1 | | 1 | | ï | 4 | | 1 | | 1. | 1 | | j. | 1 | | 1 | | ï | 1 | | 1 | 36.5 | 0 1 | 38.80 | ĵ. | 46.30 | 47.80 | 1 17 | .90 | 20.40 | 1 30.0 | 10 1 | 30.50 | 1 20.8 | 0 1 24 | 1.90 | I |
| JE I | | 1 | | 1 | | 1 | | ì. | 1 | | 1 | | T | 1 | | r | ĵ | | | | 1 | i | | 1 | 43.4 | 0 | 45.30 | 1 | 49.90 [| 53.70 | 1 31 | .50 | 33.30 | 1 25. | 10 1 | 29,30 | 1 19.4 | 0 25 | 5.50 | 1 |
| ED | | i | | i | | 1 | | ī | ï | | T | | 1 | 1 | | 1 | 3 | | 1 | | 1 | 3 | | 1 | 44.6 | 0 1 | 46.50 | 1 | 48.90 1 | 51.50 | 1 33 | .20 | 35.00 | 1 25 . | 50 | 28.60 | 1 26.7 | 0 26 | 5.50 | ı |
| BO | | 1 | | Ť | | 1 | | ŀ | 1 | | ď | | 4 | 1 | | 1 | 1 | | ĺ | | 1 | j | | 1 | 44.1 | 0 | 48.80 | 1 | 49.20 | 52.00 | 1 32 | .00 | 33.50 | 1 27.1 | 1 08 | 29.70 | 1 19.6 | 0 23 | 1.80 | ı |
| RI | | | | i. | | II. | | 1 | 1 | | 1 | | 1 | Ĺ | | ĭ | | | 1 | | 1 | i | | i | 49.1 | 0 1 | 49.00 | 1 | 44.00 | 41.50 | 29 | .80 [| 33.50 | 1 27. | 90 1 | 29.00 | 1 22.3 | 0 22 | 2.30 | ı |
| AT | | | | 1 | | ı | | 1 | 1 | | ï | | 1 | 1 | | 1 | 1 | | 1 | | f | 3 | | 1 | 45.9 | 0 [| 49.20 | 4 | 33.90 | 32.60 | 20 | .60 | 22.60 | 1 17. | 1 03 | 19.10 | 1 17.1 | 0 17 | 1.20 | ı |
| ו אט | | 1 | | ï | | 1 | | 1 | 1 | | 1 | | 1 | 3 | | 4 | 1 | | 1 | | 1 | 1 | | I | 34.1 | 0 1 | 31.80 | 1 | 16.80 | 19.90 | 18 | .10 | 19.70 | 1 14. | 50 | 17.80 | 1 19.3 | 0 15 | 5.00 | ı |
| ON I | | ar. | | 1 | | | | E | 1 | | 1 | | 1 | -1 | | ï | 1 | | i | | 1 | | | 1 | 40.9 | 0 1 | 44.30 | 1 | 41.40 | 43.60 | 34 | .50 | 34.40 | 1 19. | 40 | 26.00 | 1 20.7 | 0 17 | 7.50 | 1 |
| UE I | | 1 | | 1 | | 1 | | 1 | 1 | | ĩ | | ř | 1 | | ī | 0 | | L | | 1 | , i | | 1 | 52.5 | 0 1 | 57.00 | 1 | 43.90 | 45.40 | 1 30 | .50 | 34.60 | 1 24. | 70 J | 26.50 | 1 19.1 | .0 16 | 6.60 | 1 |
| ED | | | | Ŷ | | i | | Ē | ī | | ì | | 1 | 4 | | X | - 1 | | 1 | | 1 | | | 1 | 52.0 | 0 1 | 54.70 | 10 | 40.70 | 43.00 | 33 | .30 | 35.30 | 1 24. | 10 | 25.90 | 1 19.2 | 0 18 | 8.30 | 1 |
| BU I | | 1 | | 1 | | i. | | ī | 1 | | 4 | | | -41. | | 1 | | | 1 | | 1 | j. | | ī | 53.1 | 0 1 | 57.00 | 1 | 40.00 | 39.30 | 30 | .00 1 | 31.90 | 1 27. | 30 1 | 29.10 | 1 19.6 | 0 1 18 | 8.30 | 1 |
| RI I | | | | r | | T | | î | Í | | 1 | | ī | Ť | | 1 | 7 | | 1 | | Ĺ | ì | | ı | 46.5 | 0 1 | 52.10 | 1 | 42.70 | 44.30 | 1 28 | .50 | 33.10 | 1 21. | 80 1 | 26.50 | 1 19.3 | 0 1 20 | 0.30 | 1 |
| AT I | | 16 | | i | | Ť | | î | í | | 4 | | 1 | 1 | | 1 | 3 | | E | | 1 | | | 1 | 48.4 | 0 | 48.10 | 1 | 35.00 | 36.60 | 1 21 | .30 [| 20.30 | 1 20 . | 00 | 20.30 | 19.2 | 0 27 | 2.50 | ï |
| ו אט | | i | | ř | | ii. | | 1 | 1 | | Ϋ́ | | 1 | 1 | | 1 | d | | -11 | | ı | | | 1 | 30.2 | 0 1 | 35.00 | 1 | 18.80 | 22.90 | 1 18 | .80 | 17.60 | 1 19. | 90 | 18.70 | 19.2 | 0 2 | 1.10 | 1 |
| ON I | | | | e. | | 12 | | i. | 1 | | ī | | 1 | î | | 1 | - 3 | | ī. | | 1 | 1 | | Í | 50.2 | 0 | 52.10 | 1 | 38.80 | 39.30 | 1 25 | .80 | 30.80 | 19. | 20 | 26.80 | 19.2 | 0 2 | 3.00 | ı |
| UE I | | | | | | i i | | Ť | i | | 1 | | 1 | 1 | | ī | 1 | | 1. | | 1 | | | 1 | 52.2 | 0 1 | 53.10 | 1 | 39.80 | 41.90 | 1 30 | .90 | 31.00 | 1 28. | 40 I | 29.20 | 1 19.4 | 10 2 | 4.00 | 1 |
| | | | | - | | 1 | | 1 | 1 | | í. | | 1 | 1 | | 1 | 1 | | 1 | | 1 | | | 1 | 43.4 | 0 1 | 44.20 | 1 | 32.80 | 39.60 | 1 26 | .40 | 31.80 | 1 25. | 80 | 26.40 | 1 22.4 | 10 20 | 2.10 | 1 |
| ED | | | | 1 | | 1 | | i | | | 1 | | Ď | i | | Ĩ | i | | i | | ï | | | 1 | | 1 | | 1 | 42.00 | 40.70 | 1 30 | .00 | 31.20 | 1 | 1 | | 1 19.5 | 90 20 | 0.20 | ı |
| HU I | | | | 91 | | 31 | | ì | ř | | 4 | | ì | ì | | 1 | i | | ř | | i | | | í | | 1 | | 1 | 38.20 | 43.30 | 1 27 | .30 | 31.00 | 1 | 1 | | 19.J | 10 15 | 9.70 | 1 |
| RI | | 1 | | * | | 1 | | * | 4 | | 1 | | 1 | 1 | | 1 | | | ĵ | | d. | | | ř | | ï | | 1 | | | | .00 [| | | 1. | | 1 21.5 | 50 23 | 3.10 | ı |
| AT | | III Ba | | | | 1 | | 4 | | | 1 | | 7 | in in | | 1 | í | | | | 1 | | | | | 1 | | 1 | | ı | | 1.00 | | | 1 | | î | 1 | | i |
| ו אט | | T. | | Ť | | 4 | | ı | 4 | | 1 | | 3. | | | | | | 7 | | 7 | | | i | | , i | | | 9 | | (A) | .80 | | | i | | ī | 1 | | ľ |
| ON I | | 1 | | ı | | 4 | | 4 | 1 | | 7 | | 100 | | | 20 | - | | - 0 | | 10. | | | | | | | 1 | | | 1 | 1 | | - 1 | | | 4 | £.// | | i |

TABLE 1.1: DAILY FLOWS (ML/d) 1984

| AY | 1 | JAN | | 1 | FEB | | L | MAR | | 1 | AP | ki. | -1 | МА | X | | T | JUN | | 1 | JUL | | 1 | AUG | | 4010010000 | • | SEP | | 1 | oc | | 1 | MOA | and the latest the lat | 1 0 | EC | 1 |
|------|----------|---------|-------|----------------------|-------|-------|------|----------|-------|-----|----------|------------|------|---------|-----|-------|-----|-------|-----------------------------|-----|--------------|--------|------|--------|-----|------------|----|---------|--------|------|-------|--------|--------|------------|--|---------|--------|-----|
| | ı – | R I | T | ı | R | 7 | i | x | 7 | 1 | A | 1 2 | 1 | 1 | 1 | 7 | 1 | R | | ı | A | | Ĺ | R | ì | T | 1 | R | 1 7 | | 2 | 1 7 | ï | P 1 | T | 1 2 | ï | 2 |
| N | ener | | | | | | 1 | | | 1 | | | 1 | | 1 | | 1 | | sazzinakan Li | 1 | in the State | ı | ı | | 1 | | 1 | | 1 | - | 40.23 | 1 40.5 | s (|) | | 1 | j, | 1 |
| E | | î | | Av. | | | î | | ř., | 1 | | į. | 1 | 25.50 | d | 27.90 | ì | | į. | 1 | | I | 1 | | 1 | | 1 | | t | 1 | 42.00 | 1 45.8 | 5 1 | 1 | | ī | 1 | 1 |
| ED | 76 | i | | 1 | 23.20 | 27.20 | | | ĺ | 1 | | 1 | i | 24 . 40 | 1 | 30.00 | 1 | | ĺ | ı | | l | 1 | 56.00 | 1 | 50.60 | ī | | | 1 | 42.55 | 45.0 | 5 1 | 1 | | 1 | 1 | i |
| aυ | | 1 | | | | 26.60 | | 26.40 | 29.60 | 0 (| | i . | 1 | 25.90 | 1 | 28.70 | 1 | | 1 | ı | | le . | 1 | 40.10 | 1 | 40.60 | | | į. | 1 | 44.14 | 1 46.5 | J 26 | .77 (| 30.54 | 3 | 4: | - 1 |
| R I | | i | | 1 | 23.00 | 26.30 | | 24.90 | 27.70 | 0 1 | | 1 | 1 | 27.60 | 1 | 28.60 | 1 | 29.70 | 33.2 | 0 1 | | 1 | 1 | 37.70 | 1 | 38.40 | 1 | | i. | 1 | 41.64 | 1 43.5 | 5 29 | .36 | 30.95 | 1 | 1 | |
| \T | ř | 1 | | | 20.80 | 20.50 | E.T. | 20.50 | 20.20 | 0 1 | | E | - 1 | 20.00 | 1 | 24.30 | 1 | 21.80 | 23.7 | 0 1 | | 1 | ī | 28.10 | ī | 26.20 | i. | 41.27 | 1 43.7 | 7 1 | 26.82 | 1 30.2 | 1 21 | .82 | 20.63 | 1 19.3 | 6 18 | .22 |
| UN | | 19.40 | 18.90 | | | 17.70 | 1 | 21.00 | 17.50 | 0 1 | 15.20 | j 16. | 10 1 | 20.00 | 1 | 22.30 | 1 | 20.70 | 22.0 | 0 1 | 36.30 | 1 38. | 10.1 | 22.00 | 1 | 24.00 | r | 27.86 | 1 26.5 | 0 1 | 22.09 | 1 19.7 | 1 1 12 | .72 | 17.36 | 1 9.3 | 2 15 | .41 |
| ON | | 19.40 | 21.30 | 1 | 22.70 | 24.50 | i i | 21.90 | 23.50 | 0 1 | 21.40 | 1 24. | 00 1 | 30.80 | 1 | 32.20 | 1 | 32.90 | 36.1 | 0 1 | 42.50 | 1 45.3 | 10 1 | 33.20 | 1 | 33.50 | 1 | 44.41 | 1 47.5 | 5 | 14.36 | 1 19.7 | 2 25 | .41 | 31.14 | 1 19.4 | 1 23 | .54 |
| JE | Mill III | 24.50 1 | 27.20 | 1 | 22.70 | 25.40 | ĒΤ | 20.70 | 24.90 | 0 (| 21.00 | 1 24. | 00 1 | 26.10 | 1 | 31.40 | 1 | 21.30 | 34.2 | 0 1 | 53.10 | 55.3 | 1 06 | 41.40 | 1 | 42.60 | Î | 54.96 | 1 55.4 | 1 4 | 34.18 | 1 34.2 | 1 28 | .45 | 27.63 | 1 21 .8 | 2 23 | .86 |
| ED | 1 2 | 27.50 | 28.00 | | 21.40 | 24.50 | 1 | 24.90 | 27.00 | 0 (| 25.60 | 1 27. | 00 1 | 26.70 | 1 | 30.20 | 1 | 31.60 | 32.6 | 0 1 | 43.90 | 1 48. | 1 01 | 38.10 | 1 | 36.90 | | 50.55 | 1 53.1 | 1 34 | 31.77 | 1 37.4 | 1 1 26 | 09 (| 30.09 | 1 19.4 | 5 23 | .91 |
| BU | 1 2 | 23.30 | 27.80 | 1 | 22.80 | 24.60 | 1 | 24.40 | 26.40 | 0 1 | 22.90 | 1 24. | 20 [| 30.90 | 1 | 33.00 | 1 | 32.20 | 34.9 | 0 1 | 34.70 | 36. | 1 01 | 41.70 | 1 | 45.10 | 1 | 54.77 | 54.6 | 1 0 | 37.27 | 1 37.2 | 1 1 20 | .68 | 28.82 | 1 22.8 | 6 25 | .14 |
| RI | 1 3 | 25.60 | 27.80 | | 21.50 | 24.50 | ЕΤ | 16.50 | 27.00 | 0 1 | 25.50 | 1 26. | 10 1 | 28.00 | 1 | 32.00 | 1 | 32.20 | 34.5 | 0 1 | 32.00 | 1 36.0 | 00 | 46.90 | 1 | 47.30 | 1 | 49.14 | 1 52.6 | 2 | 30.73 | 33.1 | 1 1 27 | -41 | 29.59 | 1 21.4 | 1 24 | .27 |
| AT | | 19.50 | 21.20 | | 20.70 | 20.60 | 1 | 27.70 | 21.20 | 0 1 | 20.00 | 1 20. | 70 [| 24.50 | ī | 27.00 | ı | 27.10 | 31.8 | 0 1 | 27.00 | 26. | 50 1 | 33.30 | ı | 37.10 | ı. | 43.77 | 1 45.1 | 1 1 | 16.91 | 1 21.4 | 5 20 | .59 | 20.63 | 1 19.4 | 1 19 | .36 |
|)H | 1 1 | 19.40 | 18.70 | | 20.60 | 17.60 | ř | 20.30 | 17.30 | 0 1 | 18.50 | 1 10. | 10 1 | 20.00 | 1 | 20.60 | 1 | 29.20 | 29.7 | 0 1 | 24.90 | 1 26. | 1 08 | 27.40 | 1 | 25.50 | 1 | 21.91 | 1 24.0 | МІ | 20.36 | 1 10.5 | 9 12 | .45 | 16.91 | 11.1 | 3 16 | .77 |
| ON. | 1 2 | 23.60 | 26.30 | | 22.70 | 24.40 | 1 | 20.50 | 26.60 | 0 1 | 22.70 | 1 26. | 10 (| 27.40 | 1 | 31.70 | 1 | 41.60 | 42.8 | 0 1 | 36.70 | 39.0 | 1 06 | 35.80 | 1 | 37.70 | 1 | 45.05 | 1 45.5 | 1 1 | 28.59 | 1 30.6 | 1 15 | .54 1 | 20.50 | 1 19.1 | 3 22 | .41 |
| JE. | 1 2 | 24.10 (| 27.80 | | 21.70 | 25.00 | | 24.20 | 27.50 | 0 1 | 25.30 | 1 27. | 00 1 | 31.30 | j | 34.00 | Ť | 41.10 | 45.7 | 0 1 | 42.20 | 1 46. | 1 01 | 41.10 | 1 | 44.60 | 1 | 49.91 | 51.0 | 8 1 | 27,32 | 1 32.4 | 1 1 27 | .77 | 30,41 | 1 19.2 | 7 1 23 | .23 |
| ED | | 27.60 | 28.50 | i. | 21.30 | 25.40 | 1 | 24.40 | 26.60 | 0 1 | 24.60 | 1 27. | 50 1 | 33.00 | 1 | 35.80 | 1 | 43.50 | 42.9 | 0 [| 44.10 | 1 44. | 70 | 49.20 | 1 | 50.40 | 1 | 45.86 | 49.5 | 0 1 | 30.82 | 1 32.7 | 1 1 29 | .13 | 30.77 | 1 19.5 | 9 22 | .95 |
| 8V | 1 2 | 25.50 | 28.50 | | 26.90 | 27.90 | 1.3 | 22.00 | 25.50 | 0 1 | 24.70 | 1 28. | 00 1 | 32.40 | 1 | 34.70 | 1 | 33.40 | 35.9 | 0 1 | 50.40 | 51.5 | 1 00 | 52.70 | 1 | 55.00 | ī | 47.18 | 1 50.2 | 7 1 | 28.59 | 1 31.5 | 1 1 27 | .27 | 30.59 | 1 19.4 | 1 23 | .00 |
| RI | 1 2 | 25.20 (| 30.40 | | 22.50 | 25.10 | 1 3 | 21.00 | 24.70 | οι | 23.20 | 1 28. | 00 (| 26.50 | i | 32.00 | 1 | 32.70 | 35.5 | 0 1 | \$2.70 | 55. | 1 00 | \$1.20 | 1 | 52.30 | ī. | 48.00 | 1 51.0 | 0 1 | 28.54 | (31.7 | 1 1 27 | .95 | 31.32 | 1 19.2 | 7 22 | .36 |
| AT. | 1 2 | 24.00 | 23.10 | | 20.60 | 18.60 | 1 | 20.50 | 19.20 | 0 1 | 19.90 | 1 20. | 00 1 | 24.40 | 1 | 22.40 | i i | 26.90 | 30.0 | 0 1 | 48.00 | 51.3 | 1 00 | 39.60 | 1 | 41.40 | 1 | 36.73 | 37.2 | 7 1 | 21.32 | 1 20.0 | 9 1 20 | .22 | 19.86 | 1 13.7 | 7 17 | .45 |
| KU | 1 3 | 20.20 | 18.30 | 1 | 15.20 | 16.70 | 1 | 14.80 | 17.00 | a 1 | 14.00 | 1 17. | 60 1 | 15.20 | - 1 | 19.20 | 1 | 26.30 | 25.2 | 0 1 | 39.70 | 1 40. | 1 06 | 21.10 | | 22.50 | 1 | 19.04 | 1 23.3 | 0 1 | 15.59 | 1 17.4 | 5 13 | .68 | 17.00 | 1 13.5 | 9 16 | .54 |
| ON | 1 2 | 24.60 | 27.70 | 1 | 20.00 | 24.50 | 1 | 20.40 | 25.70 | 0 1 | 20.50 | 1 25. | 30 1 | 20.40 | 1. | 22.20 | I | 34.50 | 36.7 | 0 1 | 49.90 | 53. | 10 1 | 37.60 | i i | 38.30 | i | 42.92 | 1 47.4 | i4 | 26.54 | 1 24.9 | 5 25 | .09 | 28.77 | 16.5 | 0 17 | .95 |
| UE | 1 2 | 23.60 | 25.20 | 1 | 20.60 | 25.60 | × 7 | 24.10 | 26.0 | 0 1 | 23.20 | 1 25. | 60 | 27.70 | 1 | 30.00 | 1 | 32.70 | 37.0 | 0 1 | 44.70 | 45. | 60 1 | 46.00 | 4 | 47.50 | ł | 51.18 | 1 50.6 | 12 | 27.45 | 1 31.5 |) 26 | 36 | 27.54 | 1 14.7 | 2 16 | .82 |
| ED | 1 3 | 24.80) | 28.20 | 1 | 24.30 | 23.80 | 1 | 23.50 | 25.6 | 0 1 | 23.70 | 1 26. | 40 [| 25.60 | 1 | 30.00 | 1 | 38.20 | 39.1 | 0 1 | 40.10 | 1 43. | 1 01 | 46.60 | 1 | 49.90 | 1 | 46.73 | 1 54.0 | 0 1 | 28.50 | 1 31.2 | 3 1 21 | .22 | 26,36 | 1 15.7 | 2 16 | .36 |
| a.U | 1 2 | 24.40 | 26.50 | 1 | 23.00 | 25.70 | 1 | 20.50 | 25.1 | 0 1 | 21.70 | 1 25. | 40 | 29.40 | 1 | 33.00 | 1 | 40.30 | 44.4 | 0 | 52.40 | 56. | 20 1 | 51.80 | 1 | 53.10 | 1 | 53.73 | 1 55.4 | 16 1 | 20.32 | 1 30.8 | 6 20 | .18 | 28.59 | 1 13.9 | 1 17 | .00 |
| RI | 1 2 | 21.90 | 26.30 | | 23.10 | 26.00 | 1 | 25.30 | 24.9 | 0 1 | 19.70 | j 21. | 00 1 | 30.90 | 1 | 33.00 | 1 | 44.60 | 45.0 | 0 | 55.10 | 60.0 | 00 1 | \$0.20 | 1 | 54.90 | 1 | 48.36 | 1 52.4 | 1 1 | 31.18 | 1 33.0 | t 24 | .18 | 26.41 | 1 14.5 | 0 17 | .13 |
| A7 | 1 1 | 21.50 | 22.30 | 1 | 20.50 | 18.90 | 1 | 16.00 | 20.20 | 0 1 | 16.20 | 1 19. | 90 | 20.40 | 1 | 22,60 | 1 | 37.80 | 41.9 | 0 1 | 54.80 | 56. | 10 1 | 47.30 | 1 | 48.60 | 1 | 40.23 | 4 42.7 | 3 1 | 21.72 | 1 30.0 | 6 19 | 1.50 1 | 29.13 | 1 19.3 | 6 17 | .60 |
| ON | 1 2 | 20.20 | 19.00 | 1 | 12.80 | 17.10 | , | 19.70 | 18.0 | 0 (| 13.00 | 1 16. | 50 | 17.70 | 1 | 20.10 | 1 | 26.50 | 24.9 | 0 | 46.10 | 1 45. | 70 1 | 30.50 | 1 | 31.00 | 1 | 24.13 | 1 25.2 | 13 | 16.63 | 1 19.1 | 8 16 | .09 [| 17.68 | 1 15.5 | 4 16 | .59 |
| ON | 1 2 | 24.60 | 27.00 | 1 | 24.20 | 25.80 | 1 | 20.70 | 25.70 | 0 1 | 14.50 | 1 18. | 50 1 | 27.10 | 1 | 30.70 | 1 | 36.10 | 38.5 | 0 | 56.80 | 59. | 80 j | 50.40 | 1 | 51.30 | 1 | 41.95 | 1 42.0 | 5 1 | 25.45 | 1 30.7 | 3 22 | . 68 | 26.50 | 1 12.6 | 8 17 | .60 |
| u e | 1 2 | 23.90 | 29.10 | | 20.50 | 23.50 | 1 | 20.60 | 25.2 | 0 1 | 19.60 | 1 22. | 50 | 31.50 | 1 | 33.50 | 1 | 42.80 | 46.2 | 0 | 68.30 | 1 67. | 10 1 | 53.20 | 1 | 54.10 | 1 | 44 . 73 | 1 48.6 | 2 | 33.95 | 31.2 | 3 [2] | .72 | 25.77 | 1 19.2 | 7 15 | .45 |
| ED G | 1 2 | 25.20 | 28.30 | 1 | 25.40 | 28.00 | | 25.00 | 28.9 | 0 1 | 27.30 | 1 28. | 00 1 | 27.20 | 1 | 31.60 | 1 | 35.60 | 37.0 | 0 | 66.60 | 64. | 70 1 | 49.70 | 1 | 52.60 | 1 | 46.14 | 1 47.0 | 68 | 29.95 | 30.4 | 1 23 | .95 [| 27.00 | 1 12.2 | 7 16 | .04 |
| 10 | 1 2 | 24.20 | 28.10 | 1 | | | 1 | 24.60 | 25.10 | 0 | 24.30 | 1 27. | 00 1 | 31.80 | 1 | 35.00 | 1 | 46.60 | 50.6 | ۱ ٥ | 51.60 | 50. | 50 1 | 50.00 | 1 | 52.70 | ì | 43.23 | 1 46.6 | 6 1 | | í | 1 23 | .41 (| 26.09 | 1 19.2 | 2 17 | .13 |
| a I | | 25.30 | | 1 | | | 1 | 24.50 | 26.7 | 0] | 20.10 | 1 26. | 50 | | 1 | | 1 | 50.00 | 51.9 | 0 1 | 40.30 | 1 41. | 30 1 | 49.50 | -1 | 52.90 | Ŧ | 40.86 | 1 44.7 | 17 1 | | 1 | (23 | .86 | 27.18 | 11.0 | 4 16 | .72 |
| AT | M1 3 | 20.50 | | 501 A1750 Inc 181 | | | 188 | 21.00 | | 0 1 | 19.90 | 1 21. | 80 | | 3 | | 4 | 39.30 | 42.9 | 0 1 | 38.10 | 1 39. | 30 1 | | 1 | | 1 | 30.41 | 1 35.0 | 1 00 | | r | 1 | 1 | | 1 19.2 | 7 16 | .86 |
| U2N | 311 | 20.50 | | - 8 | | | 1 | | ı | 1 | 18.90 | (16. | 50 | | 1 | | i | | ı | 1 | 30.90 | 33. | 80 (| | 1 | | 1 | 24.41 | 1 23.5 | 9 | | í | Ī | ä | | 1 11.0 | 6 16 | .00 |
| ON | | 23.00 | | | | | 1 | | ı | | 23.30 | Ann Magain | | | 1 | | 1 | | Ī | 1 | 55.70 | 1 56. | 40 1 | | 1 | | 1 | | i. | 1 | | 1 | 1 | 1 | ı | 1 19.3 | 6 17 | .86 |
| | | 23.90 1 | | | 1 | | 100 | | i | | | | 1 | | 1 | | | | 1 | ű | 62.80 | 1 62. | 50 / | | 1 | | 1 | | 1 | 1 | | ŧ | 1 | 1 | | 1 | Ĭ. | |

TABLE 1.1: DAILY FLOWS (ML/d) 1985

| λY | £ | JAN | | Ţ. | FEB | | 1 | MAR | | y j | APR | | 1 | HAY | | .1 | JUN | 1 | JUL | | A | /UG | | 1 | SEP | | l. | OCT | | I NO | v | 1 | DEC | | DAY |
|------|-----|------|-----|-----|--------|----|------|------|-----|------------|--------|------|----|--------|-------|-----|--------|--------|--------|------|-------|------|------|---|--------|------|------|-------|------|--------|-------|-----|------|-------|------------|
| | 1 - | R I | т | ì | R j | т | ì | R | 1 | τ i | R I | T | 1 | R I | T | 1 | R I | 7 1 | R í | T | R | 1 | 7 | 1 | R I | T | l i | R I | T | R | 1 7 | 1 | R | į ž | i |
| ON | | | | | | | 1 | | î | 1 | 27.3 | 25.0 | î | ì | | 1 | 1 | 1 | 35.2 | 36.5 | I | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | | ı | MON |
| UE. | ì | 13.1 | 15. | 6 1 | 1 | | i | | í | î | 26.5 | 24.8 | 1 | 1 | | 1 | 1 | 1 | 40.6 | 42.9 | l, | 1 | | 1 | 1 | | 1 40 | 0.8 | 45.1 | į. | 1 | 1 | | L | TUE |
| | 1 | 19.5 | 24. | 3 | -1 | | 1 | | 1 | -1 | 23.4 | 24.9 | 1 | 31.5 | 33.0 | 1 | 1 | 1 | 33.9 | 40.9 | | ũ | | 1 | 1 | | 1 43 | 1.7 | 44.4 | į. | 1 | T. | | ŕ | 1 MEC |
| HU | 1 | 25.8 | 26. | 2 | Ĩ | | | | 4 | ī | 23.4 | 25.7 | 1 | 27.9 | 33.4 | 1 | 1 | 1 | 45.7 | 44.6 | 48. | 0 1 | 48.7 | ŀ | ì | | 1 37 | 7.1 | 42.1 | f: | ī | t | | 1 | TEU |
| RI | 1 | 21.3 | 25. | 9 [| 21.1 | 25 | .4 1 | 24.0 | 1 2 | 24.7 | 19.2 | 20.0 | ı | 36.9 | 37.2 | 1 | 1 | 1 | 36.9 | 37.0 | 50. | .5 | 55.6 | 1 | 3 | | 1 42 | 2.6 | 43.2 | 28.4 | 31. | 0 1 | | 1 | FRI |
| AT | 1 | 19.4 | 19. | 0 1 | 20.6 | 19 | .6 1 | 21.4 | 1 1 | 19.6 | 17.3 [| 18.7 | (| 28.7 | 32.3 | . 1 | 25.0 | 27.0 | 21.7 | 24.6 | 51. | .0 1 | 52.6 | 1 | .1 | | 1 25 | 9.0 | 31.2 | 21.2 | 1 18. | 6 | | ì | j sat |
| ON | 1 | 16.4 | 16. | 4 | 23.1 | 25 | .4 1 | 21.2 | 1 1 | 18.5 | 10.8 | 17.5 | 1 | 28.5 | 28.0 | 1 | 21.3 | 23.4 | 23.4 | 27.5 | 40. | .9 1 | 40.7 | 1 | 27.1 | 33.2 | 1 20 | 1.0 | 19.6 | 12.7 | 1 16. | 6 | 12.0 | 1 17. | .8 SON |
| ON | 1 | 19.3 | 23. | 5 | 24.0 | 26 | .5 [| 21.4 | 1 2 | 22.2 | 17.1 | 19.9 | T | 29.6 | 31.7 | 1 | 28.6 | 30.9 | 45.1 | 40.1 | 38. | 2 1 | 38.5 | 1 | 51.8 | 53.6 | 1 26 | 8.9 | 34.1 | 25.1 | 1 27. | 0 1 | 23.6 | 1 26 | .7 (1906 |
| Œ. | 1 | 23.0 | 24. | 3 | 21.7 | 24 | .5 1 | 21.0 | 1 2 | 23.6 | 19.6 | 23.6 | 1 | 34.9 [| 38.7 | 1. | 31.5 | 32.8 [| 56.2 | 58.0 | 37. | 9 1 | 39.8 | 1 | 63.4 | 60.8 | 1 34 | 1.8 [| 38.5 | 25.5 | 1 28. | 2 | 23.8 | 1 26 | .9 TUE |
| ED | i | 20.0 | 23. | 3 | 23.5 | 24 | .9 [| 21.1 | 1 2 | 25.1 | 23.9 | 25.1 | d: | 35.3 | 39.3 | ı | 32.9 | 37.6 | 39.8 | 42.6 | 40. | .1 1 | 42.0 | Ţ | 54.0 | 57.9 | 30 | 0.5 1 | 34.6 | 25.4 | 1 28. | 2 | 22.3 | 1 27 | .2 MED |
| EU | ı | 22.0 | 23. | 4 (| 23.3 [| 24 | .8 | 24.1 | 1 2 | 24.9 [| 24.0 | 25.5 | 1 | 41.7 | 46.2 | 1 | 36.9 | 42.2 | 40.1 | 44.4 | 49. | .2 1 | 51.9 | 1 | 53.2 | 55.8 | 30 | 0.9 | 32.3 | 25.5 | 1 30. | 6 1 | 27.7 | 25 | .9 THU |
| RI | ī | 19.6 | 24. | 0 1 | 20.1 | 25 | .4 1 | 20.8 | 1 2 | 23.9 | 19.7 | 25.0 | 1 | 44.2 | 46.6 | 1 | 39.8 | 43.0 | 50.8 | 53.9 | 61. | .6 1 | 61.6 | 1 | 48.9 | 51.0 | 32 | 2.2 | 33.6 | 30.3 | 1 30. | 7 1 | 20.0 | 1 26. | .8 FRI |
| AT | 1 | 19.5 | 19. | 3 (| 20.2 | 20 | .0 | 20.6 | 1 1 | 19.0 | 19.8 | 20.5 | I | 38.6 | 43.3 | 1 | 36.9 [| 39.7 | 47.9 | 50.1 | 46. | .1 | 50.9 | 1 | 43.9 | 46.5 | 1 22 | 2.5 | 21.0 | 17.6 | 1 19. | 2 1 | 18.6 | 1 18 | .9 SAT |
| - אט | .1 | 15.6 | 17. | 0 1 | 20.4 [| 17 | .6 | 20.7 | 1 | 17.8 | 17.3 [| 19.2 | 1 | 35.0 | 34.1 | 1 | 26.3 | 28.7 [| 26.5 | 23.2 | 34. | 4 1 | 37.0 | 1 | 25.9 | 27.0 | 1 16 | 6.4 | 18.4 | 14.7 | 1 16. | 8 | 13.8 | 1 17. | .0 (som |
| ON | 1 | 20.2 | 24. | 0 [| 20.5 [| 24 | .5 [| 20.8 | 1 2 | 22.2 | 26.1 | 30.3 | 1 | 38.6 | 43.9 | 1 | 44.0 [| 45.9 | 29.5 | 33.2 | 52. | 1 1 | 52.6 | 1 | 43.8 | 45.1 | 1 16 | 6.1 | 20.0 | 16.1 | 18. | 9 1 | 25.4 | 28 | .3 MOI |
| UE | 1 | 24.5 | 26. | 8 [| 22.7 | 24 | .9 | 20.5 | 1 2 | 24.6 | 26.4 | 27.1 | 1 | 44.3 | 46.6 | 1 | 32.2 | 32.3 [| 35.8 | 39.1 | 51. | 4 1 | 54.5 | 1 | 43.3 [| 48.6 | 1 32 | 2.0 1 | 33.9 | 22.2 | 1 25. | 6 | 25.1 | 1 27 | .9 1 TOE |
| ED | 1 | 19.5 | 23. | 7 1 | 25.0 | 24 | .8 [| 21.0 | 1 2 | 22.0 | 24.7 | 29.6 | £ | 35.7 | 37.2 | 1 | 30.0 [| 31.3 [| 36.5 | 39.5 | 46. | .6 | 46.9 | 1 | 48.3 | 49.3 | 1 29 | 9.6 | 33.6 | 26.1 | 1 29. | 9 | 23.1 | 1 24 | .7 WEE |
| BU | 1 | 22.8 | 23. | 4 1 | 20.2 | 24 | .0 [| 21.1 | 1 2 | 3.3 | 31.0 | 31.8 | Ĺ | 36.3 | 37.5 | 1 | 27.1 | 30.8 | 41.1 | 45.1 | 45. | .1 | 46.8 | 1 | 46.2 | 48.3 | 32 | 2.5 | 33.6 | 28.4 | 1 29. | 3 | 19.4 | 1 23 | .2 TEC |
| RI | 1 | 20.6 | 24. | 0 1 | 20.4 | 23 | .5 | 21.8 | 1 2 | 25.2 | 27.6 | 28.6 | 1 | 30.1 [| 33.4 | 1 | 29.7 | 34.3 | 42.4 | 44.3 | 38. | .0 1 | 40.5 | ł | 45.3 | 50.7 | 1 30 | 0.7 | 35.6 | 25.7 | 28. | 5 1 | 23.3 | 1 25 | .4 FR3 |
| AT | ı | 19.6 | 18. | 6 | 21.0 | 19 | .7 1 | 21.1 | 1 1 | 19.6 | 23.5 | 25.0 | 1 | 20.5 | 24.7 | 1 | 23.6 | 21.8 | 35.6 | 35.6 | 34. | .1 | 35.7 | 1 | 42.5 | 42.8 | 1 22 | 2.5 1 | 19.8 | 20.0 | 1 19. | 5 1 | 18.9 | 19 | .6 SAT |
| บพ | 1 | 19.5 | 17. | 9 | 20.4 | 17 | .9 | 14.1 | 1 1 | 17.0 | 37.1 (| 22.7 | Ĩ. | 23.4 | 23.6 | 1 | 15.9 J | 18.4 | 28.9 [| 28.3 | 21. | .2 1 | 22.1 | 1 | 23.8 | 25.6 | 1 15 | 5.1 | 18.0 | 17.0 | 1 17. | 1 1 | 19.1 | 1 18 | .3 50% |
| ON | Ī | 21.6 | 23. | 1 (| 20.5 | 23 | .8) | 22.5 | 1 2 | 24.8 | 32.0 | 34.0 | Ī | 26.0 | 26.8 | 1 | 26.7 | 29.7 | 42.0 | 45.4 | 36. | .1 1 | 38.7 | 1 | 47.1 | 48.5 | 1 25 | 5.7 | 31.7 | 25.8 | 1 30. | 0 1 | 15.3 | 19 | .5 MON |
| UE | 1 | 22.8 | 25. | 3 (| 24.8 | 21 | .0 1 | 22.5 | 1 2 | 26.5 | 36.8 | 41.1 | 1 | 33.0 | 37.3 | - 1 | 30.1 [| 33.2 [| 49.2 | 51.6 | 44. | .8 | 46.1 | 1 | 49.5 | 51.7 | 1 26 | 9.5 [| 31.4 | 28.3 | 1 29. | 2 | 19.1 | 18 | .6 TUE |
| ED | Ĺ | 22.0 | 24. | 0 1 | 20.3 | 24 | .6 [| 25.4 | 1 2 | 27.4] | 36.2 | 37.9 | 1 | 34.7 | 36.5 | 1 | 27.8 | 31.9 [| 49.7 | 54.8 | 45. | 6 1 | 48.1 | 1 | 50.6 | 52.9 | 1 37 | 1.1 | 32.5 | 22.7 | 1 28. | 4 1 | 18.9 | 1 18 | .0 100.0 |
| BO | 1 | 22.2 | 24. | 5 1 | 26.8 | 27 | .0 1 | 28.5 | 1 2 | 29.2 | 33.5 | 37.6 | i | 36.0 | 39.2 | 1 | 33.4 | 35.1 | 51.1 | 56.7 | 47. | .1 1 | 49.4 | 1 | 49.1 | 52.6 | 33 | 2.7 | 31.4 | 28.2 | 1 29. | 7 1 | 19.1 | 1 18 | .4 780 |
| RI | t | 19.7 | 24. | 2 | 22.2 | 27 | .6 | 25.8 | 1 2 | 9.3 [| 35.0 1 | 38.5 | 1 | 43.2 | 45 .8 | 1 | 36.4 | 39.5 | 50.3 | 52.3 | 45. | .5 | 49.0 | 1 | 49.5 | 51.8 | 1 25 | 9.1 | 31.6 | 26.7 | 1 30. | 5 (| 19.2 | 18 | .2 FR |
| AT | t | 19.6 | 19. | 2 1 | 20.6 | 22 | .2 | 20.9 | 1 1 | 19.7 | 27.9 1 | 29.5 | 1 | 38.3 | 42.3 | 1 | 23.3 | 23.2 | 46.8 | 51.2 | 38. | .1 1 | 40.1 | 1 | 41.9 | 44.2 | 1 20 | 1 6.0 | 20.7 | 1 20.7 | 1 19. | 7 [| 19.1 | 1 19 | .4 SA1 |
| UN | ı | 19.6 | 17. | 9 1 | 20.6 | 16 | .9 [| 18.4 | 1 1 | 1 0.81 | 22.2 | 24.1 | Ĭ. | 33.7 | 34.3 | ı | 22.0 | 23.9 1 | 38.7 | 41.8 | 21. | .6 | 22.9 | 1 | 31.3 | 31.4 | 1 10 | 6.2 | 17.8 | 19.5 | 1 18. | 0 | 18.6 | 1 17 | .3 501 |
| ON | i | 23.7 | 25. | 0 1 | 20.7 | 23 | .7 1 | 22.8 | 1 2 | 27.6 | 31.5 | 35.0 | 1 | 33.4 | 36.0 | ı | 35.8 | 38.6 4 | 58.8 | 58.8 | 39. | .з ј | 42.5 | 1 | 40.5 | 42.5 | 23 | 3.3 | 29.4 | 23.8 | 1 28. | 2 | 19.5 | 1 19 | .0 MO |
| UE | 1 | 23.0 | 25. | 2 1 | 21.4 | 26 | .3 | 24.6 | 1 2 | 27.2 1 | 32.4 | 35.6 | 1 | 32.4 | 34.6 | - 1 | 37.1 | 42.6 | 53.5 | 55.0 | 46. | .0 [| 47.8 | 1 | 42.1 | 46.7 | 1 28 | 8.6 | 32.3 | 25.8 | 29. | 6 | 19.0 | 1 20 | .1 10 |
| ED | 1 | 22.3 | 25. | 8 | 25.6 | 27 | .4 1 | 25.3 | 1 2 | 24.9 | i | | 1 | 33.7 | 35.8 | 1 | 44.2 | 45.7 [| 38.5 | 40.5 | 45. | .3 | 48.6 | 1 | 47.1 | 47.6 | 1 34 | 4.7 | 32.3 | 28.9 | 1 29. | 1 1 | 18.6 | 1 17 | .2 WE |
| BU | 1 | 20.4 | 23. | 4 1 | 26.5 | 30 | .0 1 | 25.5 | 1 2 | 28.3 [| 1 | | Ĺ | 31.3 | 32.8 | 1 | 44.6 | 46.7 | 1 | | 46. | .9 | 50.7 | 1 | 44.6 | 48.0 | 1 20 | 6.8 | 30.3 | 21.7 | J 30. | 3 | 18.6 | 1 17 | .5 TH |
| RI | 1 | T. | | 1 | ì | | ı | 27.4 | 1 2 | 28.2 | i | | 4 | 27.8 1 | 31.5 | L | 49.1 | 52.7 | 1 | | 47. | .4 | 50.7 | 1 | 42.9 | 46.9 | Ē | 1 | | 31.6 | 28. | 7 1 | 18.5 | 1 19 | .2 FR |
| AT | 1 | 1 | | t | Ī | | 1 | 15.9 | 1 1 | 18.7 | 1 | | 1 | - 3 | | ı | 37.5 | 43.5 | 1 | | 41. | .6 | 45.5 | 1 | 34.6 | 39.1 | 1 | į. | | 1 18.2 | 20. | 9 | 18.4 | 1 19 | .3 SA |
| UN | ſ | í | | 1 | 1 | | 1 | 11.4 | 1 1 | 16.7 [| 1 | | Ĺ | i | | 7 | 36.5 | 36.7 | 1 | | Ĺ | Ú | | ī | 23.2 | 24.8 | ì | Ŧ | | ŗ | i | 1 | 18.6 | 1 18 | .3 501 |
| ON | ī | i | | 1 | í | | 1 | | 1 | í | ī | | Ī | - 1 | | Ē | 1 | 4 | 1 | | Į. | 1 | | ī | 41.0 | 42.3 | Ī | 1 | | 1 | T | 1 | 18.6 | 1 18 | .5 1908 |
| UE | 4 | 1 | | 4 | | | | | 1 | , | 4 | | ï | | | | | | -/1 | | E | 1 | | 1 | 4 | | 1 | 330 | | E. | 4 | 1 | 18.7 | 19 | .6 TUI |

TABLE 1.1: DAILY FLOWS (ML/d) 1986

| AY | à. | JAN | 1 | FEB | , i | MAR | 1 | APR | j | MAY | | Ť | JUN | | Jul | | i M |)G | 1 | SEP | Ĩ | 007 | | 1. 2 | WOV YOU | 1 | DEC | | 1 |
|-----------|----------|--------|--------|----------|------------|------------|--------|------------|-----------------|----------|------------|---------|--|---------------------|-------------------|--------------------------|---|-----|-------------|----------------|----------|-----|----------|------|---------|----|------------|---|-----|
| | ı – i | Ř į | 7 1 | R 1 | T 1 | 3 [| 7 (| B 1 | 7 I | R (| 7 | j. i | ı | 1 |) A | 1 2 | I R | ĵ. | | » i | 1 | a. | 1 7 | 1 4 | 1 2 | T | a 1 | 7 | 1 |
| | | | | <u> </u> | | | | | | • | Andrew Fra | 4 | 1 | TO THE RESIDENCE OF | | a etam a d | i e e e e e e e e e e e e e e e e e e e | 1 | TE STATE OF | t ale renovier | 1 | | I | i i | 1 | 1 | | | — i |
| N E | t i | 9 | | - 1 | 1 | | 1 | 25.9 | 29.0 (| | | 1 | 4 | | 27.0 | 1 20.1 | 376 | î | î | ì | i | | Î | ì | ì | 1 | 1 | | ı |
| D | b P | 19.3 | 17.0 (| 10 | | | 1 | 28.7 1 | 30.0 [| ï | | i | ĺ | | 33.1 | 1 37.6 | ı | 1 | 1 | Ĩ | | | ĺ | 1 | 1 | 1 | 1 | | 1 |
| , | | 22.9 | | Y. | i | 9.8 36. | 1 | 28.1 (| 28.6 | 32,4 | 36.9 | 1 | 1 | | 37.0 | 1 37.0 | | 1 | 1 | 1 | 1 | | į. | 1 | 1 | 1 | 40 | | j |
| ī | N 9 | 22.9 | | ì | ì | i | Е | 27.5 | 27.2 | 36.6 | 35.9 | 4. | I. | | 38.3 | 1 44-2 | ı | ı | 1 | 1 | 1 | | ı | 1 | ı | 1 | ī | | d |
| AT | | 19.6 1 | | 20.8 | 19.2 | 20.6 1 | 21.1 1 | 20.6 | 21.0 | 25.3 | 29.4 | 1 | 1 | | 42.7 | 1 45.6 | ĭ | ä | 1 | 4 | 1 | | i. | E | T | 1 | 1 | | |
| UN | | 20.1 | 17.1 (| 20.5 | 17.0 I | 19.1 | 18.4 | 19.3 | 19.2 | 21.7 | 25.1 | 1 2 | 6.2 | 26.3 | 39.2 | 1 41.6 | I. | 1 | 3 | 1 | 1 | | | 1 | 1 | 1 | 1 | | â |
| ON | | 23.5 | 26.5 | 21.7 | 24.4 | 24.1 | 26.5 | 26.1 | 28.3 [| 33.4 | 38.6 | 1 3 | 3.2 (| 35.7 | 47.0 | 1 50.7 | 1 | 1 | 1 | 1 | 1 | | Ē | ì | Ĭ | | ì | | j |
| 0E | | 24.0 | 26.5 | 24.1 (| 25.4 | 25.3 | 26.3 | 26.7 | 20.7 | 36.6 | 39.6 | 1 3 | 5.4 (| 38.9 | 44.2 | 1 42.7 | ł | ì | 1 | 1 | 1 | | Ŀ | 1 | 1 | 1 | 1 | | |
| ŒD | L | 24.6 | 26.7 | 25.6 | 26.8 | 24.6 | 29.0 | 24.0 | 25.8 | 41.1 | 40.4 | 1 3 | 7.7 (| 42.1 | 27.0 | 1 38.1 | l. | 1 | 1 | 1 | 1 | | E | 1 | 1 | .1 | 1 | | |
| :BU | ī. | 23.2 | 26.6 | 26.8 | 28.1 | 26.1 | 26.6 | 25.1 | 28.1 | 36.0 | 40.9 | 1 3 | 6.4 (| 35.2 | 38.0 | 1 40.7 | 1 | 1 | 1 | 1 | 1 | | Ĺ | 1 | 1 | 1 | 1 | | |
| R.I | ı | 19.6 | 27.9 1 | 22.2 4 | 26.3 | 19.2 | 24.9 [| 25.1 | 28.4 (| 37.5 | 39.1 | 1 2 | 8.6 (| 33.9 | 33.1 | (36.1 | 1 | 1 | 1 | 3 | 1 | | ř. | 1 | 1 | 1 | 1 | | |
| AT. | 1 | 23.8 | 20.6 | 20.7 | 19.6 | 19.3 1 | 20.3 1 | 19.9 | 23.6 | 32.1 [| 37.5 | 1 2 | 3.9 | 25.0 | 31.0 | 1 25.9 | 1 | 1 | 1 | II. |) | | l. | 1 | 1 | 1 | 1 | | |
| QN | 1 | 19.7 | 17.3 | 20.5 | 17.3 | 19.3 [| 17.7 | 19.6 | 19.5 | 33.7 | 31.9 | 1 5 | 3.6 (| 22.8 | 21.1 | 1 34.4 | į | 1. | 1 | 4 | . 1 | | ř. | 1 | 1 | 1 | I | | |
| DN | | 20.2 | 26.3 | 25.2 1 | 26.6 | 20.7 | 23.9 | 25.6 | 31.1 1 | 40.6 [| 43.6 | 1 3 | 1.6 | 36.0 | 35.0 | 1 36.4 | • | Ţ | 1 | 1 | 1 | | | ï | ĭ | 1 | 1 | | |
| UΣ | 1 | 25.5] | 26.2 | 23.8 (| 26.1 | 20.8 | 23.9 | 29.6 | 28.5 | 42.8 | 42.6 | 1 3 | 3.2 (| 34.2 | 30.3 | 1 42.0 | 1 | 1 | 1 | 1. | 1 | | È | 1 | 1 | 1 | 1 | | |
| ED | | 25.6 | 27.4 1 | 23.4 | 25.6 | 25.0 1 | 25.0 | 29.9 1 | 30.2 | 36.8 | 38.0 | 1 2 | 8.6 1 | 33.6 | 41.8 | (43.6 | L | 1 | I, | 1 | -3 | | | - 1 | 1 | 1 | 1 | | |
| BU | 1 | 27.6 | 28.8 | 29.6 | 26.1 | 21.2 1 | 24.8 | 28.1 [| 29.1 | 39.5 | 41.5 | 1 3 | 3.5 (| 33.5 | 40.5 | 1 45.4 | t | I. | 1 | 1 | 1 | | ķ | 1 | 1 | 1 | T | | |
| a I | I. | 24.0 1 | 28.2 | 20.1 | 26.9 | 21.7 | 24.7 | 26.6 | 30.0 | 36.1 [| 36.1 |] 3 | 3.6 1 | 36.7 | 52.2 | 1 53.1 | ì | 1 | 1 | 1 | | | k. | 1 | 1 | J | 1 | | |
| AT | | 20.3 | 20.2 | 19.4 | 19.3 | 19.4 1 | 20.1 | 25.5 | 26.1 | 20.6 | 39.5 | 1 2 | 6.6 [| 25.8 | 43.2 | 1 46.7 | 1 | 4 | 1 | 1 | , | | i. | 1 | 1 | ſ | 1 | | |
| W | ľ. | 20.1 | 16.5 | 19.2 1 | 16.9 | 19.4 | 17.8 | 20.1 | 30.3 1 | 22.7 | 22.4 | 1 2 | 0.7 (| 19.6 | 31.0 | (33.9 | 1 | I | 1 | ï | 1 | | Ĺ | 1 | 1 | 1 | 1 | | |
| ON | i. | 23.6 | 23.3 | 23.6 [| 24.2 | 23.9 1 | 25.6 | 24.7 | 26.6 | 20.6 | 22.0 | 1 2 | 9.5 (| 34.5 | 40.7 | 1 44.8 | 1 | 1 | 1 | 1 | (| | | 1 | Ī | 1 | 1 | | |
| UE | ı | 21.2 | 24.6 | 22.0 | 24.6 | 24.9 | 28.2 | 26.0 | 29.8 | 28.3 | 32.6 | 1 3 | 3.6 1 | 36.1 | 50.2 | (53.6 | 1 | 1 | T | 1 | | | | E | 1 | -1 | 1 | | |
| ED | | 25.0 1 | 25.9 | 22.6 | 23.9 | 25.2 | 26.6 | 28.2 1 | 32.3 | 38.1 [| 39.1 | 1 3 | 4.1 | 37.9 | 52.6 | 1 55.6 | j | 1 | Ť. | 1 | | | | 1 | 1 | 1 | 1 | | |
| HU | 1 | 24.9 | 27.3 | 21.3 [| 22.7 | 25.9 | 27.6 | 31.4 1 | 30.4) | 30.5 | 36.8 | 1 3 | 1.9 | 34.0 | 55.8 | 1 56.3 | 1 | 1 | T | 1 | 1 | | | -1 | 1 | 1 | 1 | | |
| RI | F. | 22.3 | 27.2 | 19.3 | 25.6 1 | 25.3 [| 30.0 | 26.9 | 31.1 1 | 36.0 | 34.6 | 1 3 | 3.0 | 36.8 | 46.2 | (45.0 | 1 | 1 | 1 | | ł | | ĺ. | d. | 1 | 1 | 3 | | |
| AT | l, | 21.0 | 18.5 [| 19.3 1 | 19.1 | 22.7 | 22.6 | | over the factor | 26.7 | 29.0 | 91. 900 | 5.9 | | | 1 36.8 | | l. | | d | 1 | | <u>l</u> | 1 | 1 | 1 | 1 | | |
| UN | | 20.5 | 15.9 | 19.4 1 | 16.9 | 19.4 (| 19.1 | 22.4 1 | 120 | | 22.5 | | 0.6 | | | 1 28.3 | | Ţ | 1 | ĵ | | | | 1 | T | | 1 | | |
| KON | L | 24.2 | 26.2 | 24.5 | 26.5 | 22.9 | | 33.4 1 | | | | | 8.3 | 40.8 | | | | 1 | | il. | 3 | | · i | £ | 1 | • | 1 | | |
| UE | I, | 27.1 | 28.2 | 23.6 | 25.1 | 28.0 | 28.0 | 38.0 | 36.0 1 | 10000000 | 35.6 | T 504 | 7.2 | | 7 (77) 1751 (142) | IN ASSET | | I. | Į. | 4 | 3 | | | 1 | I. | 1 | 1 | | |
| E.D | f s | 24.5 | 28.0 | 21.7 | 25.6 | 24.8 [| 27.9 | 34.6 | 35.0 1 | 36.0 | 38.6 | TAY 25 | 5.6 | 40.B | () | Maria Cara | 20 | 3. | | 1 | 1 | | | l. | 1 | 1 | J | | |
| BU | l · | 26.7 1 | 25.7 | 28.2 1 | 28.0 j | 26.5 | 27.1 | 1 | 353 | 37-4 | 39.1 | | 1.7 | | | 54.0 | 1 | 18" | | 1 | 1 | | i. | £ | 1 | 0 | 1 | | |
| a i | L | 23.8 1 | 26.4 | 20.7 | 28.1 | 19.5 | | 1 | | 35.2 | 41.2 | | The same of the sa | 37.9 | | 1 | 1 | 1 | | 4 | 1 | | | E | 1 | 3. | 1 | | |
| AT | 1 | 1 | 1 | 1 | 1 | 15 | 21.4 | I | ı | 36.1 | 35.8 | | 9.1 | | | Ļ | 1 | 1 | 1 | .1 | 1 | | | | f. | 4 | ī | | |
| ÜМ | Ī | Ĭ. | - 1 | T. | 1 | 19.0 (| 19-6 | 1 | ı | I. | | 100 | | 30.0 | | U | 1 | Ţ | 1 | 1 | 1 | | E a | (1) | 1 | (| 1 | | 1 |
| ЮM | ľ | Ţ | 1 | ı | I | 19.1 | 21.5 | 1 | 1 | 1. | | 1 3 | 0.2 | 30.9 | | t | 4 | 1 | 1 | 1 | 1 | | l. | 1 | ı | 1 | 1 | | 1 |

TABLE 2.0: PARTICULATE REMOVAL SUMMARY

| | | 1 | | | 1986 | | | П | | 1985 | _ = | | 11 | | 1984 | | 1 | | | 1983 | | |
|------|--|-------|--------|--------|------|----------|------|------|------------|---------|-----|------------|-----|--|---------------|-------|-----|------|-----|------|----|------|
| | | 1 | MAX. | 1 | MIN. | 1 | AVG. | 11 | MAX. | MIN. | 1 | AVG. | ii | MAX. | MIN. | AVG. | 1 1 | AAX. | 1 1 | MIN. | 1 | AVG. |
| JAN | Turbidity (FTU) | | 6.30 | 1 | 3.00 | 1 | 4.03 | 11 | 57.30 | 3.70 | 1 | 14.49 | ii | 8.60 | 3.50 | 4.96 | 100 | | 1 | | 1 | |
| 1 | 9 | 1 | 0.24 | 1 | 0.07 | 1 | 0.14 | 11 | 0.61 | 0.16 | 1 | 0.26 | 1.1 | 1.40 | 0.18 | 0.50 | 1 | | 1 | | 1 | |
| Î | Prime Coagulant (mg/L) | 1 | * 5.37 | * | 4.07 | 1 * | 4.85 | 11 | 31.50 | 14.00 | 1 | 18.42 | 11 | 20.90 | 11.70 | 14.94 | 1 | | 1 | | 1 | |
| ī | Coagulant Aid (mg/L) | 1 | 0.16 | 1 | 0.09 | 1 | 0.12 | 11 | 0.32 | 0.11 | 1 | 0.16 | 11 | 0.15 | 0.15 | 0.15 | 1 | | 1 | | 1 | |
| í | Metal Res. Al (mg/L) F | 1 | | 1 | | 1 | | 11 | | 1 | 1 | | 1.1 | | l | | 1 | | Î | | 1. | |
| i | | | 0.08 | 1 | 0.07 | 1 | 0.08 | 11 | 0.06 | 0.03 | 1 | 0.04 | 1.1 | 0.03 | 0.02 | 0.03 | 1 | | 1 | | 1 | |
| i | Hq Hq | Ĺ | | Î | | Î | | 11 | | Ĭ. | 1 | | 11 | 4 | ľ | L I | 1 | | 1 | | 1 | |
| i | .r | 1 | | i | | i | | 1.1 | | ĩ | 1 | | Н | | I | [] | 1 | | Î | | 1 | |
| 1 | Temperature (Deg.C.) F | 1 | 0.50 | î | 0.50 | ì | 0,50 | ΪĪ | 2.00 | 0.50 | 1 | 0.70 | 11 | 0.50 | 0.50 | 0.50 | 1 | | Î. | | 1 | |
| í | | | | یے آئے | | <u> </u> | | -11 | | · | | | 11 | | | | Π | | - | | - | |
| EB I | Turbidity (FTU) | 1 | 4.80 | ī | 1.20 | 1 | 2.24 | 11 | 12.80 | 1.60 | Ĭ | 3.31 | 11 | 58.90 | 3.10 | 6.65 | | | 1 | | 1 | |
| LD | | 1 | 0.18 | ř. | 0.07 | î | 0.11 | 11 | 0.90 | 0.14 | ī | 0.30 | TI | 0.66 | 0.20 | 0.31 | 11 | | ı | | 1 | |
| i | Prime Coagulant (mg/L) | 10.50 | * 5.35 | 1 * | 4.57 | 1 * | 4.95 | 11 | 15.70 | 1 11.00 | î | 13.79 | 11 | 34.80 | 11.80 | 15.31 | 1 | | T | | 1. | |
| i | Coagulant Aid (mg/L) | i | 0.10 | i | 0.10 | i | 0.10 | ii | 0.26 | 0.10 | î. | 0.14 | 11 | 0.25 | 0.15 | 0.16 | | | 1 | | 1 | |
| į | Metal Res. Al (mg/L) | 1 | | Ť | | 1 | | H | 10/11/2017 | I | ř. | | 11 | 1 1100 | ľ | i | i i | | ì | | 1 | |
| - 1 | Metal Nes. Al (mg/b) i | | 0.09 | 1 | 0.02 | 1 | 0.06 | 11 | 0.05 | 0.03 | i | 0.04 | 11 | 0.05 | 0.03 | 0.04 | | | i | | 1 | |
| | wir I | | 0.03 | î | 0.02 | i | 0.00 | ii | | 1 | ï | F. 802.05 | 11 | | i | i i | i i | | î. | | 1 | |
| 4 | рН | | | 1 | | 1 | | 11 | | ì | ì | | 11 | | I | i | i i | | Ť | | i | |
| 1 | Temperature (Deg.C.) H | 1 | 0.50 | i | 0.50 | 1 | 0.50 | 11 | 0.50 | 0.50 | i | 0.50 | ii | 1.00 | 0.50 | 0.70 | ú | | ì | | j | |
| i | | | | | | | | - 11 | | | | | 11 | | | | 1 | | | | | |
| MAR | Turbidity (FTU) | 1 | 18.40 | i | 1.50 | 1 | 4.29 | 11 | 34.60 | 2.10 | 1 | 13.21 | 11 | 83.60 | 4.70 | 11.27 | | | .1 | | 1 | |
| 1 | The state of the s | i | 0.17 | í | 0.08 | Ť | 0.10 | Ĥ | 0.72 | 0.13 | î | 0.23 | 11 | 0.74 | 0.13 | 0.31 | 11 | | Î | | Î | |
| - 1 | Prime Coagulant (mg/L) | | * 7.10 | * | 4.64 | * | 5.29 | 11 | 27.20 | 13.30 | ì | 19.67 | 11 | 38.40 | 1 12.10 | 18.89 | 1.1 | | 1 | | 1 | |
| 1 | Coagulant Aid (mg/L) | 1 | 0.12 | í | 0.05 | ì | 0.08 | ii | 0.25 | 0.10 | 1 | 0.15 | 11 | 0.15 | 0.15 | 0.15 | l t | | ì | | 1 | |
| | Metal Res. Al (mg/L) | : 1 | y | i | | 1 | | ii. | | | i | 30 \$ 50 T | 11 | | l samunia | 1 | l | | î | | ĺ | |
| 1 | | 1 | | í | | Î. | | 1.1 | | i | Î | | 11 | | I. | | i i | | i | | ì | |
| - 4 | | 7.0 | 0.08 | i | 0.04 | ÷ | 0.06 | 11 | 0.04 | 0.01 | ì | 0.02 | ii | 0.06 | 0.02 | 0.03 | | | î | | ï | |
| 1 | рН | | 0.00 | i | 0.01 | ľ | | 7-1 | | 1 | ì | | 11 | 12.18.19.10.10.10.10.10.10.10.10.10.10.10.10.10. | l section and | | i | | i | | i | |
| | Temperature (Deg.C.) I | | 1.00 | 1 | 0.50 | 1 | 0.60 | 1.1 | 4.80 | 0.50 | 4 | 1.30 | 11 | 1.00 | 0.50 | 0.80 | i | | | | 4 | |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.0: PARTICULATE REMOVAL SUMMARY

| (4) | | I | | | 1986 | | 11 | | 1985 | | 11 | | 1984 | | | | 1983 | |
|--------------------|----------|--------|---|-----|-------|---------|--------|-----------------------|----------------|---------|--------|---------------|------------|-------|-------|---|------|-------------|
| | | i i | MAX. | 1 | MIN. | I AVG. | 11 | MAX. | MIN. | AVG. | П | MAX. | MIN. | AVG. | MAX | | MIN. | AVG |
| Turbidity (FTU) | | R I | 20.20 | | 2.40 | 7.81 | | 121.60 | 6.20 | 46.34 | 11 | 25,70 | 2.00 | 4.72 | | | l. | I |
| Imported (110) | | T | | î | 0.08 | 0.09 | i | | 0.12 | 0.19 | 0.00 | 0.62 | 0.09 | 0.13 | L | | i | Ĩ |
| Prime Coaqulant | | | 26.80 | i. | 16.50 | 1 20.63 | 11 | Complete Agriculture | - Annaparation | 32.17 | | 29.00 | 15.60 | 20.54 | H | | 1 | ì |
| Coagulant Aid | (mg/L) | 1 | 0.20 | i | 0.06 | 0.12 | 19,000 | A STATE OF A | 0.09 | 0.20 | 100 | 0.15 | 0.15 | 0.15 | 11 | | ì | 1 |
| Metal Res. Al | (mg/L) | RI | 0,20 | 4 | | | ii | | | 1 | 11 | STUBLIFORM | 1 | i | 11 | | ï | i |
| Metal Nes. Al | 0.0 980 | T I | 0.13 | ř. | 0.04 | 0.09 | 11 | 0.03 | 0.02 | 0.03 | 11 | 0.05 | 0.02 | 0.03 | 11 | | Î | i |
| | | ויב | V.13 | E | | 1 | 101 | | 1 | 1 | 11 | - M | | Ì | i i | | ì | i |
| pH | | T 1 | | 1 | | å. | | | | | Ť | | | i | ii | | î | i |
| Temperature | (Deg.C.) | RI | 11.50 | 1 | 1.50 | 6.30 | 11 | 13.50 | 3.50 | 7.00 | 11 | 10.50 | 2.50 | 5.40 | i.i | | i | 1 |
| 1 | | | | | | | - 11 | | | | - 11 | | | | 11 | | | بالمستديد ه |
| Turbidity (FTU) | | R I | 10.30 | Ĩ. | 2.70 | 1 5.23 | 11 | 22.10 | 4.00 | 8.91 | 11 | 59.40 | 2.70 | 14.72 | 11 | | ſ | 1 |
| 1 | | T i | 0.15 | i | 0.08 | 0.11 | 11 | 0.35 | 0.10 | 0.14 | 11 | 0.22 | 0.07 | 0.10 | LT | | l. | 1 |
| Prime Coagulant | (mq/L) | ì | 26.00 | Î. | 17.30 | 20.70 | П | 21.90 | 17.70 | 20.25 | 11 | 33.20 | 14.50 | 20.24 | ı i | | 1 | 1 |
| Coagulant Aid | (mg/L) | i | 0.18 | | 0.07 | 0.13 | | Fig. 120 September 15 | 0.07 | 0.15 | 11 | 0.25 | 0.15 | 0.16 | 11 | | Ī | 1 |
| Metal Res. Al | (mg/L) | RI | | ì | | Ĺ | 11 | | ľ | Ĺ | 11 | | Ì | 1 | Lt | | I | 1 |
| | | | 0.12 | 1 | 0.10 | 0.11 | 11 | 0.09 | 0.06 | 0.08 | 11 | 0.06 | 0.03 | 0.04 | 11 | | I | 1 |
| Hq | | RI | | Î | | ì | 11 | | ĺ | ľ | 11 | | | ľ | 11 | | 1 | ı |
| 1 | | T I | | i | | Í | 11 | | | ľ | II | 2 | | ľ | 11 | | 1 | 1 |
| Temperature | (Deg.C.) | R I | 18.00 | Ť. | 11.50 | 1 14.90 | 11 | 18.50 | 9.00 | 1 15.70 | 11 | 15.50 | 10.00 | 12.60 | 11 | | i | Î |
| | | | | | | | - 11 | | | | - 11 | | | | 11 | | | |
| Turbidity (FTU) | | R I | 82.80 | T | 3.70 | 1 16.72 | 11 | 29.00 | 3.10 | 10.81 | 11 | 29.00 | 2.40 | 6.55 | 11 | | I. | ı |
| I Talbiate's (Lio) | | T I | C III. | | 0.07 | | | | 0.10 | 0.14 | 7. 7. | 0.20 | 0.06 | 0.11 | DV-24 | | 1 . | ٠ أ |
| Prime Coaqulant | | | 36.50 | 0.5 | 17.50 | 1 21.83 | 1300 | | 17.90 | 20.29 | 100000 | | 18.90 | 20.20 | H | | i. | Ĺ |
| Coagulant Aid | (mg/L) | 0.10 | 23.00 | 1 | 0.07 | 0.14 | | | 0.09 | 0.16 | | 0.15 | 0.15 | 0.15 | 20020 | | ľ | 1 |
| Metal Res. Al | (mg/L) | | | ĩ | | i | 11 | | l - Mariae | | 11 | 100-176-776-7 | | * | i i | | 1 | 1 * |
| recal ness, Al | | TI | 0.12 | 4 | 0.06 | 0.09 | 11 | 0.09 | 0.07 | 0.08 | H | 0.09 | 0.05 | 0.07 | 2.00 | | ì | Î |
| Hq H | | RI | 8.04 | 100 | 7.73 | | 30,33 | | 0 | İ | ii | | na kozvati | 1 | i i | | 1 | i |
| i bu | | TI | 7.38 | | 7.34 | 7.36 | | | ľ | Ĭ | 11 | | | i | i i | , | Î | i |
| Temperature | (Deg.C.) | 100 | (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) | | 17.50 | 20.10 | 0000 | 150 | 18.50 | 1 20.00 | 11 | 23.00 | 15.00 | 20.60 | 1 1 | | I | i |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.0: PARTICULATE REMOVAL SUMMARY

| | | 1 | | | 1986 | | 11 | | 1985 | | 11 | | 1984 | | 1 | 1983 | Contractor 40 Art |
|--|----------|-----------|-------|----|-------|---------|--------------------|-------|--------|--------|------|-------|-------|----------------|---------|---------|-------------------|
| 1417 | | | MAX. | 1 | MIN. | AVG. | - 11 11 - 11 | MAX. | MIN. | AVG. | 11 | MAX. | | AVG. | MAX. | MIN. | I AVG |
| Turbidity (FTU) | | R I | 18.70 | 1 | 3.00 | 7.49 | H | 12.70 | 3.20 | 6.45 | 11 | 19.60 | 1.90 | 1 5.55 | İ | L | 1 |
| | | T I | 0.15 | î | 0.06 | 0.08 | 11 | 0.21 | 0.12 | 0.14 | 11 | 0.16 | 0.06 | 0.09 | 1 | j. | 1 |
| Prime Coagulant | (mq/L) | 1 | 22.20 | Î. | 18.40 | 1 20.53 | 11 | 21.50 | 14.50 | 19.00 | 11 | 20.90 | 13.50 | 18.54 | 1 | J. | ı |
| Coaqulant Aid | (mg/L) | 1 | 0.21 | 1 | 0.08 | 0.15 | 11 | 0.22 | 0.10 | 0.15 | 11 | 0.15 | 0.15 | 0.15 | | t | 1 |
| Metal Res. Al | (mg/L) | R I | | Ĺ | | I | 11 | | l | | 11 | i | | ĺ | L | Ï | ľ |
| 1 | | T i | 0.14 | î | 0.09 | 0.11 | 11 | 0.21 | 0.06 | 0.12 | 11 | 0.10 | 0.07 | 0.08 | i | Ì | 1 |
| Hq | | RI | 8.40 | | 8.12 | 8.25 | | | ľ | | 11 | | | 1 | Ť | j i | Ĺ |
| ı pii | | T i | 7.75 | i | 7.53 | 7.61 | -5 | | î · | i | ii | í | | i | ì | Î | î |
| Temperature (| Deg.C.) | - 1 | 27.50 | 1 | 21.50 | 24.10 | E 155 | 25,50 | 21.80 | 24.20 | 11 | 24.00 | 21.00 | 22.60 | i | j . | i . |
| Temperature (| | ~ | | | | | - 11 | | | | ii. | | | l | 1 | | |
| Turbidity (FTU) | | R I | | | | 1 | 17 | 16.20 | 1.70 | 4.59 | 11 | 12.00 | 1.40 | 1 3,75 | 1 38.40 | 1 2.40 | 1 5. |
| Idibidity (FIO) | | TI | | 1 | | d Î | - 11 | 0.24 | 0.02 | | ii | 0.15 | 0.06 | 0.09 | 0.17 | 0.09 | 1 0. |
| I Dulas Cosculost | (mg/L) | 1 | | 1 | | 1 | - 11 | 21.30 | 18.50 | 19.87 | 0.00 | N. | 13.40 | | 1 23.20 | 1 19.70 | 1 20. |
| Prime Coagulant Coagulant Aid | (mg/L) | - 4 | | J. | | 4 1 | 1.6 | 0.21 | 0.06 | 0.14 | | 0.15 | 0.15 | and the second | 0.15 | 0.15 | 1 0. |
| The second secon | | n I | | 1 | |] 1 | 1.1 | 0.21 | 0.00 | 0.14 | | 0.15 | 0.15 | 0.13 | 0.13 | 1 0.13 | |
| Metal Res. Al | (mg/L) | m | | 1 | | l i | 11 | 0.11 | 0.10 | 0.11 | 11 | 0.13 | 0.07 | 0.09 | 0.13 | 0.04 | 1 0. |
| 1 | | T | | 1 | | | 11 | 0.11 | . 0.10 | 0.11 | 1.1 | 0.13 | 0.07 | 0.09 | 1 0.13 | 1 0.04 | 1 0. |
| pH | | R | | 1 | | 1 | 1.1 | | l. | | 11 | 3 | | 1 (| 1 | i. | ŀ |
| -1 | | T | | I | | | 1.1 | 65 66 | l | 04.00 | 11 | 05.50 | | | 05.00 | 1 04 00 | 1 04 |
| Temperature (| Deg.C.) | R | | Ī | | 1 | 11 | 25.60 | 23.00 | 24.00 | 11 | 25.50 | 23.00 | 24.40 | 25.00 | 1 24.00 | 1 24. |
| Turbidity (FTU) | | R I | | 1 | | 1 | - 1 L | 20.50 | 3.00 | 5.90 | n | 40.40 | 4.10 | 9.44 | 1 27.50 | 1 2.50 | 1 8. |
| i inibiately (Fig. | | ጥ 1 | | i | | 2. 1 | 11 | 0.22 | 0.10 | 0.14 | ii | 0.15 | | 0.10 | 0.15 | 0.09 | 1 0. |
| Prime Coagulant | (mg/L) | • | | î | | i i | - 11 | 23.00 | 18.30 | 20.14 | ii | | | 1 16.09 | 1 21.90 | 1 19.40 | 1 20. |
| Coagulant Aid | (mg/L) | - 1 | | 1 | | 1 | 1.1 | 0.22 | 0.10 | | 11 | 0.21 | 0.09 | 0.15 | 0.15 | 0.15 | 1 0. |
| Metal Res. Al | 111100 m | ו ו מ | | 1 | | 1 | 11 | 0.22 | 1 0.10 | . 0.13 | 11 | 0,21 | 0.09 | 1 0.15 | 1 0.15 | 1 0.13 | 1 |
| metal kes. Al | (mg/L) | m 1 | | | | l. | 11 | 0.08 | 0.08 | 0.08 | H | 0.08 | 0.05 | 0.07 | 0.14 | 0.07 | 1 0. |
| | | r | | 1 | | I T | 11 | 0.08 | 1 0.00 | 0.00 | 11 | 0.00 | 0.03 | 1 0.07 | 0.14 | 1 0.07 | 1 0. |
| pH | | K | | 1 | | J. | 1.1 | | L | Į. | 11 | į. | | de l | | | ı. |
| | | T | | 1 | | ļ | 11 | 05.00 | 10.50 | 00.00 | 11 | 04.50 | 10 50 | 1 01 00 | 04.50 | 1 17 00 | 1 0: |
| Temperature (| Deg.C.) | R | | 1 | | J | 1.1 | 25.00 | 19.50 | 22.30 | H | 24.50 | 18.50 | 21.00 | 1 24.50 | 1 17.00 | 1 21. |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.0: PARTICULATE REMOVAL SUMMARY

| | | | I | | 1986 | | | 11 | | 1985 | | 11 | | 1984 | | 11 | 1983 | |
|--|-----------|----------|-------|----------|------|----|------|--------------|---------|-------|---|---------|-------|--------------|---|---------------------------|----------------------------|--------|
| | | | I MAX | , l | MIN. | 1 | AVG. | - 1 I 1 I | MAX. | MIN. | AVG. | 11 | MAX. | MIN. | AVG. | II MAX. | MIN. | I AVG. |
| Turbidity (FTU | \ | R | i | 1 | | | | | 78.60 | 3.50 | 15.80 | 11 | 20.60 | 2,20 | 1 4.87 | 11 26,90 | 2,10 | 1 11.2 |
| i furblately (Fig. | | T | ř | i | | 1 | | 11 | 0.22 | 0.09 | · IND CONTRACTOR | 11 | 0.13 | 0.08 | 0.10 | THE PERSON NAMED IN | | 1 0.0 |
| 1 5 1 5 | t (mg/L) | | i. | | | | | 11 | 44.10 | 14.40 | A CONTRACT OF THE PARTY OF THE | ii | 21.90 | 14.20 | 1 15.65 | 39.7 | | 1 20.8 |
| Prime Coagulan | | | ļ. | | | | | 11 | 0.27 | 0.09 | 0.16 | Decine. | 0.19 | 0.08 | 0.15 | Total City Control Street | 44 PEC 145-000-027820-000- | 0.1 |
| Coagulant Aid | (mg/L) | - | Į. | | | 1 | | 11 | 0.27 | 0.05 | . 0.10 | 11 | 0,13 | 1 0.00 | 1 0.15 | 11 0.1. | , , 0.13 | 1 0.1 |
| Metal Res. Al | (mg/L) | K | I. | | | ı. | | 10.0 | 0.08 | 0.07 | 0.07 | | 0.08 | 0.04 | 0.06 | 11 0.05 | 5 0.02 | 0.0 |
| 1 | | 1 | Į | I | | 4 | | 11 | 0.08 | 0.07 | 0.07 | 11 | 0.00 | 0.04 | 0.06 | 11 0.0. | , 0.02 | , 0.0 |
| l pH | | R | I | ŀ | | Į. | | 11 | | | le e | 11 | | | ls . | 14 | 1 | |
| 1 | | T | ł | 1 | | I | | 11 | au ree. | | | 11 | | | li Linera ilean | 11 | | 1 |
| Temperature | (Deg.C.) | R | } | 1 | | J | | - 11 | 19.50 | 13.00 | 15.30 | 11 | 17.00 | 15.00 | 16.30 | 11 19.00 | 1 10.50 | 1 15. |
| Turbidity (FTU | - | R | 1 | - | | 1 | | 11 | 43.90 | 3.10 | 12,36 | 11 | 28.50 | 5.90 | 15.62 | 11 68.00 | 1 4.40 | 1 14.2 |
| i inibidity (i io | | Т | i | | | i | | 11 | 0.23 | 0.09 | 0.16 | 11 | 0.30 | 0.09 | 0.11 | 11 0.10 | 0.09 | 1 0.3 |
| Prime Coagulan | t (mg/L) | | į. | î | | | | ii | 27.00 | 15.20 | S Comments | ii | | 15.00 | | 11 33.30 | | 1 21.6 |
| Coagulant Aid | (mg/L) | | į. | i | | i | | 11 | 0.26 | 0.09 | 0.16 | 19000 | 0.26 | 0.09 | 0.17 | | | 1 0.1 |
| The second of th | 1.00 | F | J. | | | 4 | | 1.6 | 0.20 | 1 | | | 0.20 | | | 11 | 0.20 | 1 |
| Metal Res. Al | (mg/L) | T. | | į | | 1 | | ii | 0.09 | 0.09 | 0.09 | 11 | 0.07 | 0.03 | 0.04 | 11 0.05 | 0.04 | i 0.0 |
| I | | Т | I . | Į. | | 4 | | 1.8 | 0.09 | 0.09 | 0.09 | 11 | 0.07 | . 0.03 | 0.04 | 11 0.0. | , 0.04 | 1 9.5 |
| Hq 1 | | R | ł. | ŀ | | i. | | 4.0 | | | l) | Н | | | | . | | |
| L | | T | 1 | , | | | | 11 | 44. EU | | | Н | | | | 11 | . ! | ! |
| Temperature | (Deg.C.) | R | 1 | ļ | | I | | | 13.00 | 6.00 | 9.40 | 11 | 14.50 | 4.00 | 8.50 | 11 10.50 | 3.50 | 1 7.2 |
| | | | | | | | | - 11 | | | | 11 | | | | [] | | |
| Turbidity (FTU |) | R | 1 | 1 | | 1 | | 11 | 99.30 | 6.90 | | 11 | | • | e como e constituir de la constituir de | 11 107.30 | 10 | 1 46.9 |
| Î | | T | 1 | 1 | | 1 | | 11 | 0.39 | 0.14 | 0.21 | 11 | 0.33 | • 00-0000 0- | 0.17 | THE RESERVOIS | Service Control of | 1 0.2 |
| Prime Coagulan | t (mg/L) | | 1 | ĺ | | 1 | | 11 | 49.80 | 15.30 | 27.85 | 11 | 34.80 | 17.00 | 22.14 | 11 51.40 | 1 17.00 | 31.8 |
| Coagulant Aid | (mg/L) | | ì | Î | | 1 | | 11 | 0.38 | 0.10 | 0.21 | 11 | 0.28 | 0.11 | 0.18 | 11 0.50 | 0.15 | 1 0.3 |
| Metal Res. Al | (mg/L) | R | Y | 1 | | 1 | | 11 | | | | 11 | | 1 | ŀ | 11 | Í | Ī |
| | | T | ì | ì | | Ì | | 11 | | L . | I | 11 | 0.03 | 0.02 | 0.03 | 11 0.03 | 0.01 | 1 0.0 |
| l bH | | R | i | i | | ı | | 11 | | l | 1 | 11 | | 1 | l | П | 1 | 1 |
| Pn | | m | Y | i | | i | | 11 | | i. | ĺ | ii | | i | 1 | ii | | í |
| (M | (Doc C) | D | 1 | | | i | | 11 | 6.00 | 0.50 | 1.70 | ii | 4.50 | 1.00 | 2.00 | 11 1.50 | 1 -1.00 | i 0.3 |
| Temperature | (Deg.C.) | K | į. | | | | | 1.1 | 0.00 | 0.50 | 1.70 | 4.1 | 3.50 | 1.00 | , 2.00 | 11 1.30 | . 1.00 | |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.1: PARTICULATE REMOVAL PROFILE (AUG 1983)

| I DATE I | | TUI | RB I | DITY | (F: | ru) | | 1 | COAGULANT | COAG. AID | | | | | | рН | TEMP DEG. C |
|-------------|---------|-------|------|------|------|--------|--------|-------|-----------|---------------------|------|------|-----|--------|---|--------|-----------------------|
| 1 | | Raw | 1 | Set. | 1 | Filter | Treat. | ı | mg/L | mg/L | mg/L | _ [| Raw | Treat. | | | |
| 1 | | 2.60 | 1 | 0.33 | | 0.11 | 0.11 | 1 | 21.70 | 0.15 | | 1 | | 1 1 | | 1 | 24.0 |
| 2 | ĺ | 4.00 | Ī | 0.56 | ī | 0.13 | 0.12 | 1 | 20.70 | 10.15 | | 1 | | 1 1 | | 1 | 24.0 |
| 3 | | 3.20 | Ī | 0.56 | 1 | 0.13 | 0.15 | 1 | 19.80 | 0.15 | | - 1 | | 1 1 | | 1 | 1 24.0 |
| 4 | [| 3.20 | Ĵ | 0.80 | 1 | 0.14 | 0.13 | 1 | 20.50 | 0.15 | | 1 | | 1 1 | | İ | 24.0 |
| 5 I | | 5.90 | 1 | 0.34 | 1 | 0.11 | 0.12 | 1 | 20.80 | 0.15 | | -)- | | . 1 1 | | 1 | 24.0 |
| 6 1 | | 4.30 | î | 0.49 | ì | 0.10 | 0.10 | 1 | 20.60 | 10.15 | | 1 | | 1 1 | | 1 | 25.0 |
| 7 1 | | 2.40 | 7 | 0.35 | 1 | 0.10 | 0.10 | 1 | 21.00 | 0.15 | | - 1 | | 1 1 | | Î | 25.0 |
| 8 I | i I | 4.30 | | 0.52 | P | 0.10 | 0.10 | 1 | 20.30 | 10.15 | | 1 | | 1 1 | | 1 | 1 25.0 |
| 9 i | | 3.10 | - 1 | 0.54 | | 0.12 | 0.11 | Ĺ | 20.10 | 10.15 | | -1 | | t i | | 1 | 1 25.0 |
| 10 | ĺ | 3.50 | | 0.61 | | 0.11 | 0.12 | 1 | 21.20 | 10.15 | | - 1 | | 1 1 | | ī | 1 25.0 |
| 11 | i | 38.40 | | 0.90 | | 0.13 | 0.13 | ì | 23.20 | 0.15 | | 1 | | 1) | | 1 | 1 25.0 |
| 12 | | 12.30 | | 1.00 | | 0.14 | 0.17 | | 21.90 | 0.15 | | -1 | | 3 3 | | i | 1 25.0 |
| 13 i | | 5.70 | | 0.87 | 1.5 | 0.14 | 0.13 | Î: | 20.10 | 0.15 | | 1 | | 0.04 | | ı | 25.0 |
| 14 | u li | 4.30 | - 6 | 0.97 | - ~ | 0.13 I | 0.13 | | 20.60 | 10.15 | | 1 | | 1 1 | | 1 | 25.0 |
| 15 I | ľ | 5.20 | 200 | 0.87 | | 0.10 | 0.10 | 100 | | 10.15 | | T | | T 3 | | 1 | 25.0 |
| 16 | | 4.70 | 170 | 0.54 | 3 | 0.10 | 0.10 | | | 0.15 | | - 1 | | i i | | ì | 25.0 |
| 17 | ľ | 4.70 | | 0.35 | | 0.09 | 0.09 | | | 0.15 | | 1 | | 0.13 | | ī | 1 25.0 |
| 18 | | 5.00 | - | 0.20 | 12 | 0.10 | 0.10 | | 19.90 | | | i | | I I | | Ĩ | 25.0 |
| 19 | | 4.30 | =3 | 0.63 | 100 | 0.10 | 0.10 | | 19.90 | | | - 1 | | j j | | Ĩ | 25.0 |
| 20 | | 3.60 | | 0.41 | | 0.11 | 0.11 | | 20.20 | | | i | 4. | -1 | | ĺ | 25.0 |
| 21 1 | • | 3.40 | | 0.69 | | 0.10 | 0.10 | 11.4 | 20.30 | N 1 | | 1 | | 1 0.05 | | Ì | 25.0 |
| 22 | | 5.70 | 1000 | 0.77 | - 37 | 0.10 | 0.10 | 200 | | 0.15 | * | i | | 1 1 | | Î | 25.0 |
| 23 | 6 | 6.00 | 100 | 1.00 | | 0.10 | 0.09 | | 20.40 | ALL SO DOCTOR | | 1 | | 1 1 | | î | 1 24.5 |
| 24 1 | | 4.00 | - | 0.56 | | 0.11 | 0.11 | 11/55 | 20.60 | The same securities | | i | | i i | | i | 1 24.5 |
| 25 1 | | 3.90 | 576 | 0.59 | -0.5 | 0.10 | 0.10 | | 19.70 | | | i | | 1 1 | | I. | 1 24.5 |
| 26 1 | | 4.20 | 120 | 0.68 | - 32 | 0.10 | 0.10 | | | 10.15 | | i | | 1 1 | | Ĭ | 1 24.5 |
| 27 1 | l. | 5.00 | 100 | 0.57 | | 0.10 | 0.10 | | 20.80 | 12 11 THE ST | | ì | | 1 | v | i | 1 24.5 |
| 28 | ļ. | 3.00 | | 0.34 | | 0.10 | 0.10 | | | 0.15 | | i | | i i | | ì | 24.5 |
| 29 | l. | 4.20 | -3.0 | 0.34 | 197 | 0.10 | 0.10 | - | | 0.15 | | i | | 0.10 | ĺ | Ĺ | 1 24.5 |
| 30 | | 4.20 | | 0.34 | | 0.10 | 0.10 | | | 0.15 | | 1 | | 1 | | ř | 24.5 |
| 30 | l | 5.10 | | | | 0.10 | 0.11 | | | 0.15 | | - 4 | | i i | | î | 24.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (SEP 1983)

| DATE | 2250 | RB. | DITY | (F | TU) | | 1 | COAGULANT | Part I | AID | | | METAL Al (n | | | рН | I TEMP |
|------|----------------|------|---------------|-------|--------|--------|----|-----------|-----------|--|------|-----|----------------|--------|-----------|----|--------------------------|
| | Raw | J | Set. | 1 | Filter | Treat. | l | mg/L | l m | g/L | mg/I | . 1 | Raw | Treat. | Raw | | A Thomas and the same of |
| 1 | 4.20 | 1 | 1.10 | 1 | 0.10 | 0.10 | 1 | 20.90 | 10. | .15 | | 1 | | 1 | I | 1 | 1 24.5 |
| 2 | 3.10 | 1 | 0.86 | 1 | 0.14 | 0.10 | 1 | 20.00 | 10. | .15 | | 1 | | 1 | l | 1 | 1 24.5 |
| 3 | 2.80 | 1 | 0.51 | 1 | 0.12 | 0.13 | 1 | 20.90 | 10. | .15 | | 1 | | ı | l | 1 | 1 24.5 |
| 4 | 2.50 | - 1 | 0.71 | 1 | 0.12 | 0.10 | 1 | 20.60 | 10. | .15 | | - 1 | | 1 | f | 1 | 1 24.5 |
| 5 | 5.00 | - 1 | 0.68 | 1 | 0.11 | 0.11 | 1 | 21.30 | 10. | .15 | | 1 | | 1 | l | 1 | 1 24.5 |
| 6 | 17.90 | -1 | 0.96 | 1 | 0.13 | 0.12 | 1 | 21.10 | 10. | .15 | | 1 | | ì | l | A. | 1 24.5 |
| 7 . | 7.30 | -1 | 0.91 | 1 | 0.13 | 0.13 | ı | 20.20 | 10. | .15 | | 1 | |) | ł | 1 | 1 24.5 |
| 8 | 5.40 | 1 | 0.88 | 1 | 0.11 | 0.11 | 1 | 20.80 | 10. | .15 | | 1 | | 1 | l | 1 | 1 24.5 |
| 9 | 5.60 | 1 | 0.74 | 1 | 0.11 | 0.11 | 1 | 19.60 | 10. | .15 | | 1 | | 1 | l | 1 | 1 24.5 |
| 10 | 5.80 | Ì | 0.40 | 1 | 0.11 | 0.10 | ï | 20.10 | 10. | .15 | | 1 | | 1 | l | 1 | 1 24.5 |
| 11 | 6.00 | i | 0.52 | 1 | 0.11 | 0.11 | 1 | 19.60 | 10. | .15 | | 1 | | ì | ľ | 1 | 1 24.5 |
| 12 | 5.60 | T | 1.00 | Ī | 0.12 | 0.13 | 1 | 20.10 | | | | -1 | | 0.14 | I | 1 | 1 24.5 |
| 13 | 6.10 | i | 1.60 | 1 | 0.12 | 0.11 | 1 | 20.10 | 10. | .15 | | 1 | | I | l | I | 1 23.5 |
| 14 | 5.70 | T | 0.81 | 1 | 0.12 | 0.12 | 1 | 20.00 | 10. | .15 | | 1 | | 1 | ı | 1 | 1 23.0 |
| 15 | | | 0.66 | ì | 0.11 | 0.12 | Ĩ | 19.40 | 10. | .15 | | 1 | | Î i | l | 1 | 1 23.0 |
| 16 | | 3 | 0.72 | 1 | 0.12 | 0.12 | 1 | 21.70 | 10. | .15 | | 1 | | | ĺ | 1 | 1 23.0 |
| 17 | | | 0.84 | 1 | 0.11 | 0.11 | 1 | 20.50 | 10. | .15 | | 1 | | 1 | ľ | 1 | 1 22.0 |
| 18 | 12,00 | | | 100 | 0.11 | 0.11 | | 21.90 | 10. | .15 | | - 1 | | 0.08 | ĺ | ĺ | 21.0 |
| 19 | | - 5 | | 100 | 0.11 | 0.11 | Î | 20.80 | 10. | .15 | | 1 | | 1 | ĺ | Î | 1 21.0 |
| 20 | 12.70 | 3 | 0.84 | | | 0.10 | | 20.70 | | | | 1 | | 1 | ĺ | 1 | 21.0 |
| 21 | 12.00 | | | | 0.10 | 0.10 | ì | 21,10 | 10. | .15 | | ű | | I i | ĺ | 1 | 1 21.0 |
| 22 | 12.80 | - 1 | 1.40 | Ī | 0.10 | 0.10 | 1 | 21.20 | 10. | .15 | | 1 | | i | ĺ | i | 1 20.0 |
| 23 | | | 1.30 | 170 | 0.13 | 0.12 | | 19.60 | | | | i | | i | 1 | Ĩ | 1 20.0 |
| 24 | | | No and design | 150 | 0.11 | 0.11 | | 21.00 | de Garage | The state of the s | | ī | | i i | | i | 1 18.5 |
| 25 | 20077 | | 1.20 | | 0.14 | 0.12 | 50 | 20.90 | X 2 5 | | | i | | 0.07 | l | ì | 1 17.5 |
| 26 | | - 7 | | 120 | 0.12 | 0.12 | | 20.20 | | | | i | | 1 | ľ | ī | 1 17.0 |
| 27 | | | 1.20 | | 0.10 | 0.10 | | 20.40 | No permon | orazeanne mie | | 1 | | i | 1 | Ĩ | 1 17.0 |
| 28 | in the second | 100 | 24-1 | 11.00 | 0.10 | 0.09 | 50 | 21,70 | 25 PER 1 | MINERAL TO | | 9 | | ì | | i | 1 17.0 |
| 29 | | - 15 | 1.40 | | 0.10 | 0.09 | 10 | 20.40 | C. china | and the second second | | i | | | | i | 1 18.0 |
| 30 | | - 1 | 0.71 | | 0.10 | 0.10 | | 20.50 | 3 | 4.00 | | i | | i | | ī | 1 18.0 |
| 31 | and the second | 1 | | 1 | 1 | 24,23 | î | | 1 | 1 | | 1 | | i | | ì | |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (OCT 1983)

| DATE | TU | RB: | IDITY | (F | TU) | | 1 | COAGULANT | 20 | AG. ID | | 10 | | RES. g/L) | | рН | TEMP DEG. C |
|---------|-------|------|-------|------|------------------|--------|------|-----------|-----|-------------|------|----|-----|----------------|-----|--------|------------------|
| î | Raw | 1 | Set. | Ĭ | Filter | Treat. | ı | mg/L | mg |]/L | mg/L | ľ | Raw | Treat. | Raw | Treat. | Î |
| 1 | 3.30 | 1 | 0.57 | | 0.10 | 0.10 | 1 | 21.20 | 10. | 15 | | ı | | 1 1 | | ľ | 19.0 |
| 2 | 2.10 | 1 | 0.70 | Ţ. | 0.11 | 0.10 | 1 | 20.90 | 10. | 15 J | | 1 | | I I | | I | 19.0 |
| 3 [| 7.20 | 1 | 0.72 | Τ | 0.10 | 0.10 | 1 | 19.80 | 10. | 15 | | ı | | f J | | 1 | 19.0 |
| 4 1 | 6.50 | 1 | 0.62 | 1 | 0.12 | 0.12 | 1 | 20.10 | 10. | 15 | | 1 | | 1 1 | | 1 | 1 19.0 |
| 5 I | 5.00 | 1 | 0.41 | Ĩ | 0.13 | 0.13 | 1 | 20.00 | 10. | 15 | | 1 | | 1 1 | | -1 | 1 19.0 |
| 6 1 | 5.80 | T | 0.74 | 1 | 0.10 | 0.10 | 1 | 20.60 | 10. | 15 1 | | 1 | | Ĭ Ĭ | | 1 | 1 19.0 |
| 7 1 | 6.10 | | 0.70 | T | 0.09 | 0.09 | 1 | 22.20 | 10. | 15 | | 1 | | 1 1 | | 1 | 18.0 |
| 8 1 | 8.60 | I | 0.56 | 1 | 0.10 | 0.10 | Ĩ | 20.40 | 10. | 15 | | 1 | | 1 1 | | 1 | 1 18.0 |
| 9 1 | 5.70 | | 0.79 | | 0.07 | 0.08 | ï | 20.40 | 10. | 15 | | 1 | | 1 1 | | 1 | 1 18.0 |
| 10 1 | 4.30 | 155 | 0.71 | î | 0.09 | 0.08 | 1 | 19.90 | 10. | 15 | | Ī | | 1 1 | | 1 | 1 17.0 |
| 11 I | 18.00 | 183 | 0.62 | î | 0.09 | 0.08 | 1 | 21.10 | 10. | 15 | | 1 | | 1 1 | | I | 1 16.0 |
| 12 | 16.70 | - 8 | 0.47 | - 6 | 0.09 [| 0.09 | 1 | 20.80 | 10. | 15 | | 1 | | 1 1 | | 1 | 1 16.0 |
| 13 1 | 9.50 | | 0.84 | - | 0.09 | 0.09 | 1 | 20.10 | 10. | 15 | | i | | 1 0.04 1 | | ľ | 1 16.0 |
| 14 | 26.90 | - | 1.03 | ı | 0.09 [| 0.09 | 1 | 23.20 | 10. | 15 | | ĵ | | 1 1 | 產 | I | 1 16.0 |
| 15 I | 20,80 | 12 | 0.73 | i. | 0.09 | 0.09 | 1 | 25.50 | 10. | 15 | | 1 | | 1 1 | | 1 | 1 15.0 |
| 16 | 13.30 | | 0.76 | | 0.18 | 0.08 | Ĩ. | 21.00 | 10. | 15 | | 1 | | 1 0.05 1 | | Î | 14.0 |
| 17 I | 12.00 | | 1.70 | 91 | 0.12 | 0.08 | 100 | 20.70 | 10. | 15 1 | | Î | | 1 1 | | Ī | 1 14.0 |
| 18 | 9.30 | - 17 | 1.45 | - 2 | 0.11 | 0.09 | | 21.10 | 10. | 15 | | 1 | | 1 1 | | ı | 1 14.0 |
| 19 1 | 8.30 | - 1 | 1.55 | | 0.11 | 0.10 | 1 | 19.60 | 10. | 15 | | 1 | | ı i | | i | 1 14.0 |
| 20 1 | 8.60 | | 1.35 | | 0.09 | 0.08 | 200 | 20.60 | 10. | 15 | | Ī | | i i | | 1 | 13.5 |
| 21 | 12.70 | 100 | 1.40 | 100 | 0.09 | 0.08 | | 20.90 | 10. | 15 I | | 1 | | 1 1 | | 1 | 1 13.5 |
| 22 1 | 13.30 | 0 8 | 1.60 | | 0.11 | 0.10 | 1777 | 21.20 | | | | ī | | 1 1 | | Ĩ | 1 13.0 |
| 23 1 | 12.00 | | 0.93 | | 0.08 | 0.10 | | 21.00 | 200 | A. 100 | | i | | i i | | î | 1 13.0 |
| 24 1 | 13.30 | | 1.30 | - 02 | 0.10 | 0.10 | | 19.40 | 10. | 15 I | | i | | Î Î | | 1 | 13.0 |
| 25 1 | 11.70 | (2) | 1.20 | | 0.10 | 0.09 | 100 | 20.00 | | | | i | | 0.02 | | ĺ | 1 13.0 |
| 26 1 | 9.70 | | 1.00 | | 0.11 | 0.09 | 100 | 19.00 | | AVECUA III | | 1 | | 1 | | Í | 1 12.5 |
| 27 | 9.30 | | 0.94 | 100 | 0.10 | 0.09 | 100 | 21.20 | 1 | | | i | | i i | | Î | 1 12.0 |
| 28 1 | | 13 | 0.75 | - 8 | 0.10 | 0.09 | | 21.20 | | Sellices 12 | | Ť | | i i | | 1 | 1 11.0 |
| 29 1 | 19.00 | | 1.10 | | 0.11 | 0.10 | - 7 | 21.60 | 8 | | | ì | | 1 1 | | í | 1 11.0 |
| 30 I | 14.00 | 100 | 1.20 | | 0.11 | 0.11 | -57 | 20.40 | - | | | i | | i i | | Ī | 11.0 |
| - Table | 11.50 | 150 | | | 10141 FID. (4) | 0.10 | 155 | 20.50 | 24 | | | Ť | | 1 | | Î | 1 10.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (NOV 1983)

| DATE | l I | TUF | BI | DITY | (F' | ru) | | 1 0 | COAGULANT | | | | | | METAL F | |]] | рН | 1 | TEMP EG. C. |
|------|--------|-------|------|------|------|------------|--------|-----|-----------|------|---------------|---|------|---|---------|----------|--------|--------|---|----------------|
| ļ | [[| Raw | 1 | Set. | ŀ | Filter | Treat. | ì | mg/L | Ī | mg/L | ı | ng/L | 1 | Raw | Treat. | Raw | Treat. | | |
| 1 | I | 9.70 | 1 | 0.72 | 1 | 0.12 | 0.12 | 1 | 20.10 | 1 (| 0.15 | | 4 | 1 | | 1 | l | ì | 1 | 10.5 |
| 2 | ľ | 8.80 | I | 0.60 | £ | 0.12 | 0.12 | 1 | 21.20 | 1 (| 0.15 | | | 1 | | ľ | 1 | I. | L | 10.0 |
| 3 | ı | 9.50 | 1 | 1.00 | 1 | 0.13 | 0.12 | 1 | 21.10 | 1 (| 0.15 | | | 1 | | 1 | t | 1 | 1 | 10.0 |
| 4 | 1 | 8.20 | 1 | 1.20 | Ĺ | 0.12 | 0.11 | 1 | 21.10 | 10 | 0.15 | | | 1 | | 1 | t | 1 | ľ | 10.0 |
| 5 | 1 | 6.40 | Ī | 0.92 | 1 | 0.11 | 0.12 | I | 20.80 | 10 | 0.15 | | | 1 | | 1 | 1 | Ã. | 1 | 10.0 |
| 6 | ì | 6.40 | Ī | 0.87 | î | 0.12 | 0.13 | ı | 20.90 | 10 | 0.15 | | | L | | 1 | f | 1 | 1 | 10.0 |
| 7 | 1 | 5.70 | 1 | 0.73 | 1 | 0.11 | 0.10 | 1 | 20.70 | 10 | 0.15 | | | 1 | | 1 | 1 | 1 | t | 10.0 |
| 8 | i | 7.50 | I | 0.65 | 1 | 0.09 | 0.10 | 1 | 20.10 | 10 | 0.15 | | | L | | 1 | Ĭ - | 1 | 1 | 9.5 |
| 9 | 70 | 7.20 | | 0.75 | 1 | 0.10 | 0.09 | 1 | 25.40 | 10 | 0.15 | | | 1 | | 1 | I | 1 | 1 | 9.5 |
| 10 | 100 | 5.50 | 10 | 1.80 | 1 | 0.09 | 0.09 | 1 | 24.70 | 1 (| 0.15 | | | 1 | | 0.04 | L | 1 | 1 | 9.5 |
| 11 | | 4.50 | | 2.20 | í | 0.08 | 0.09 | 1 | 20.30 | 10 | 0.15 | | | 1 | | ĺ | Ĩ | i | 1 | 9.0 |
| 12 | | 5.10 | ī | 2.10 | 1 | 0.09 | 0.09 | ı | 20.80 | 10 | 0.15 | | | 1 | | ľ | 1 | 1 | 1 | 8.0 |
| 13 | | 4.40 | i | 2.20 | ì | 0.08 | 0.09 | l | 23.00 | | | | | 1 | | 1 0.05 | 1 | 1 | 1 | 7.0 |
| 14 | | 6.50 | 1 | 1.90 | Ť | 0.10 | 0.10 | 1 | 20.40 | 1 (| 0.15 | | | 1 | | ĺ | ľ | ì | 1 | 6.5 |
| 15 | | 8.70 | 70.0 | 1.90 | ì | 0.08 | 0.10 | 12 | 21.00 | 10 | 0.15 | | | 1 | | Î | Ī. | 1 | 1 | 6.5 |
| 16 | 2 | 7.10 | (3) | 2,20 | .5. | 0.10 | 0.09 | | 20.30 | 1.0 | 0.15 | | | i | | L | 1 | 1 | 1 | 6.5 |
| 17 | | 5.90 | | 1.70 | - 17 | | 0.11 | | 19.40 | 10 | 0.15 | | | 1 | | ĺ | ĺ | Ť | T | 6.0 |
| 18 | • | 5.50 | | 0.84 | 7 | 0.09 | 0.11 | 46 | 20.20 | 10 | 0.15 | | | 1 | | Ī | l. | i | 1 | 6.0 |
| 19 | 7 | 4.60 | 45 | | 18 | 0.10 | 0.10 | | 20.00 | 14 | 0.15 | | | 1 | | I | 1 | 1. | I | 5.5 |
| 20 | | 6.10 | | 0.64 | i | 0.09 [| 0.09 | î | 20.30 | 1.0 | 0.15 | | | 1 | | f · | 1 | l | 1 | 6.0 |
| 21 | | 28.80 | Ť | 1.11 | 1 | 0.11 | 0.10 | - 8 | 24.50 | 1.9 | 0,15 | | | 1 | | ľ | ľ | ì | 1 | 6.0 |
| 22 | | 18.50 | | 0.85 | Î | 0.10 | 0.10 | î | 19.30 | 10 | 0.15 | | | 1 | | 0.04 | 1 | 1 | 1 | 6.0 |
| 23 | Ē. | 23.30 | i | 0.94 | i | 0.12 | 0.12 | | 19.70 | 10 | 0.15 | | | 1 | | Ĺ | t | i | 1 | 6.0 |
| 24 | ē . | 26.70 | i | 1.33 | í | 0.13 | 0.11 | Ĩ | 21.80 | 10 | 0.15 I | | | 1 | | í | Ī | ì | 1 | 6.0 |
| 25 | | 21.00 | i | 1.30 | i | 0.14 | 0.13 | 201 | 19.70 | 8 | of territoria | | | i | | T. | Ī | 1 | 1 | 5.5 |
| 26 | | 16.80 | Ť | 0.46 | í | 0.11 | 0.12 | - | 20.30 | | | | | i | | Ĭ | ŧ | 1 | 1 | 4.5 |
| 27 | | 13.00 | 101 | 0.51 | i | 900 000- 9 | 0.11 | | 20.30 | 160 | | | | i | | i | ì | Î | 1 | 4.5 |
| 28 | | 15.70 | 23 | 1.70 | 1 | | 0.11 | (6) | 19.90 | 09.0 | ma proper 2 | | | ì | | i | ľ | î. | 1 | 4.5 |
| 29 | | 61.00 | Î | 2.80 | i | 0.18 | 0.13 | 100 | 28.50 | | 701- 10 | | | i | | i | ĭ | ì | 1 | 4.0 |
| 30 | 8 | 68.00 | i | 2.30 | ì | 0.16 | 0.15 | | 33.30 | | | | | i | | j | ì | i | i | 3.5 |
| 31 | • | 50.00 | 1 | | i | | | î | | í | | | | 1 | | 12 13 | 1 | Ý | 1 | |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (DEC 1983)

| DATE | | RB1 | DITY | (F) | ru) | | 1 | OAGULANT | AI | D 1 | AID | T | Al (mg | RES. g/L) | | рН | TEMP DEG. C. |
|------|-----------------|-----|------|-----|---------|--------|------|----------|------------|------|------|---|--------|------------------|-----------|----------|-------------------|
| | Raw | 1 | Set. | 1 | Filter | Treat. | 1 | mg/L | mg | /L | mg/L | 1 | Raw | Treat. | Raw | Treat. | I |
| 1 | 72.30 | 1 | 1.40 | | 0.14 | 0.13 | ı | 35.50 | 10.2 | 0 1 | | 1 | | 0.03 | l | 1 | 1 1.5 |
| 2 | 69.20 | 1 | 1.40 | 1 | 0.13 | 0.14 | ŀ | 34.30 | 10.2 | 0 1 | | 1 | | L | 1 | T | 1 1.5 |
| 3 | 60.00 | î | 1.20 | 1 | 0.12 | 0.12 | 1 | 30.60 | 10.2 | 0 1 | | 1 | | 1 | I | 1 | 0.5 |
| 4 | 45.00 | 1 | 1.20 | 1 | 0.15 | 0.15 | 1 | 34.80 | 10.2 | 0 1 | | 1 | | I | I | - | 0.5 |
| 5 | 52.50 | 1 | 1.80 | 1 | 0.20 | 0.17 | 1 | 27.50 | 10.2 | 0 1 | | 1 | | 1 | Ĺ | .1. | 1.0 |
| 6 | 41.50 | 1 | 3.30 | 1 | 0.30 | 0.21 | 1 | 27.60 | 10.1 | 5 | | 1 | | 0.02 | I | <u>+</u> | 1.0 |
| 7 | 79.00 | 1 | 2.30 | 1 | 0.27 1 | 0.36 | 1 | 36.90 | 10.2 | 5 1 | | 1 | | Ţ | l . | T | 0.5 |
| 8 | 107.30 | 1 | 2.00 | Í. | 0.13 | 0.22 | 1 | 50.80 | 10.5 | 0 1 | | 1 | | I | ĺ | 1 | 0.5 |
| 9 | 93.00 | 1 | 1.40 | 1 | 0.14 | 0.18 | 1 | 51.40 | 10.3 | 0 1 | | 1 | | 1 | i | 1 | 0.5 |
| 10 | 74.00 | 1 | 1.80 | 1 | 0.13 | 0.14 | 1 | 48.90 | 10.3 | 1 08 | | 1 | | 1 | 1 | i | 0.5 |
| 11 | 66.00 | 1 | 1.70 | 1 | 0.12 | 0.18 | 1 | 50.50 | 10.3 | 1 08 | | 1 | | Ĩ | 1 | L | 0.5 |
| 12 | 59.80 | 1 | 1.70 | 1 | 0.12 | 0.12 | 1 | 41.40 | 10.3 | 10 | | 1 | | 1 | I. | 1 | 0.5 |
| 13 | 44.40 | 1 | 1.30 | 1 | 0.13 | 0.13 | T | 31.70 | 10.3 | 0 1 | | 1 | | 1 0.02 | 1. | 1 | 0.5 |
| 14 | 36.80 | 1 | 1.30 | Ī | 0.13 | 0.13 | 1 | 31.30 | 10.2 | 0 1 | | 1 | | 1 | ľ | Ĩ | 0.5 |
| 15 | 57.60 | 1 | 1.80 | Ť. | 0.14 | 0.14 | ī | 37.60 | 10.3 | 0 1 | | 1 | | 1 | I | 1 | 0.5 |
| 16 | 44.00 | ì | 2.10 | ĺ | 0.13 | 0.15 | 1 | 33.00 | 10.2 | 25 | | 1 | | 1 | 1 | 1 | 0.0 |
| 17 | 63.70 | î | 1.30 | 1 | 0.21 | 0.15 | Ī | 36.20 | 10.2 | 25 1 | | 1 | | 1 | l | I | 0.0 |
| 18 | 71.30 | 1 | 1.40 | 1 | 0.22 | 0.19 | 1 | 41.90 | 10.3 | 80 1 | | 1 | | Ĺ | 1 | 1 | 0.0 |
| 19 | 55.00 | Ť | 2.50 | ī | 0.24 | 0.22 | 1 | 34.50 | 10.2 | 25 1 | | 1 | | 0.03 | 1 | 3 | 1 0.0 |
| 20 | 40.30 | - | 4.20 | - | 0.31 | 0.21 | 1 | 34.90 | 10.2 | 25 | | 1 | | f | t | L | 0.0 |
| 21 | 39.00 | i | 3.90 | 1 | 0.17 | 0.27 | ľ | 29.80 | 10.3 | 25 | | Ē | | Ì | 1 | ī | 1 0.0 |
| 22 | 32.00 | Ť | 4.90 | 1 | 0.37 | 0.23 | 1 | 25.50 | 10.2 | 20 1 | | 1 | | ī | Ĩ | 1 | 0.0 |
| 23 | p 100 mm 10 31 | - | 3.60 | i | 0.24 | 0.34 | î | 23.40 | 10.3 | 5 1 | | 1 | | 1 | I | Ī | 0.0 |
| 24 | 21.00 | | 2.70 | 1.7 | 0.20 | 0.30 | .000 | 21.10 | 10. | .5 | | i | | L | 1 | Ī | 0.0 |
| 25 | 21.00 | - | 2.40 | | 0.20 | 0.24 | 1 | 21.10 | 10. | 5 | | 1 | | ı | Ì | 1 | 0.0 |
| 26 | 24.00 | | 2.00 | 100 | 0.14 | 0.24 | Î | 19.90 | 10. | 5 | | 1 | | 1 | 1 | 1 | 0.0 |
| 27 | 15.00 | 120 | 1.90 | 20 | 0.02 | 0.25 | | 20.90 | 900 0000 0 | | | I | | 1 | 1 | 1 | 0.5 |
| 28 | 14.00 | | | | 0.90 1 | 0.30 | 5083 | 17.00 | A 1911 | | | 1 | | 1 | 1 | Ì | 0.5 |
| 29 | | | | 100 | 0.12 | 0.89 | 1.6 | 20.70 | | | | ì | | Î | I | 1 | 1 -1.0 |
| 30 | | 0.0 | 1.50 | 100 | 0.13 | 0.26 | 25 | 20.00 | | | | 1 | | 0.01 | I . | 1 | 1 -1.0 |
| 31 | G CO DE THE THE | | | | 0.63 | | | 17.70 | | | | 4 | | Ĭ | i | 1 | 1 -1.0 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JAN 1984)

| DATE I | TUI | RB1 | DITY | (F' | EU) | | 1 | COAGULANT | | | | | | RES. g/L) | | рН | I I TEMP I DEG. C. |
|--------|-------------------|------|----------------|-----|----------------------------|--------|------|-----------|---------------|--------|------|-----|-----|----------------|-----|--------|--------------------------|
| l | Raw | l | Set. | 1 | Filter | Treat. | 1_ | mg/L | mg. | L. | mg/L | Ĺ | Raw | Treat. | | | A |
| 1) | 8.60 | 1 | 1.30 | 1 | 0.15 | 0.57 | 1 | 20.90 | 0.1 | 5 | | 1 | | 1 | t | 1 | 1 0.5 |
| 2 1 | 8.10 | | | | 0.14 | 0.36 | 1 | 19.60 | 0.1 | 5 | | 1 | | 1 0.03 | 1 | 1 | 0.5 |
| 3 1 | 8.20 | 1 | 1.50 | 1 | 1.10 | 0.35 | Ī | 16.10 | 0.1 | 5 | | 1 | | i | Ĩ | 1 | 0.5 |
| 4 | 6.70 | 1 | 1.60 | 1 | 1.50 | 1.40 | ĺ | 15.20 | 0.1 | 5 | | 1 | | 1 | 1 | ì | 1 0.5 |
| 5 | 6,20 | Ī | 1.50 | 1 | 0.37 | 1.20 | 1 | 17.90 | 0.1 | 5 | | 1 | | l. | 1 | 1 | 0.5 |
| 6 | 5.60 | Ĩ | 1.40 | 1 | 0.82 | 0.95 | i | 16.30 | 0.1 | 5 | | 1 | | ĺ | 1 | Ĭ. | 0.5 |
| 7 1 | 5,30 | Î | 1.30 | 1 | 0.12 | 0.83 | ì | 20.10 | 0.1 | 5 | | 1 | | ľ. | l. | I | 0.5 |
| 8 1 | 5.30 | | 1.70 | | 0.13 | 0.23 | 1 | 20.30 | 0.1 | 5 | | 1 | | 1 0.03 | 1 | 1 | 0.5 |
| 9 1 | 5.10 | 2.5 | 1.80 | | 2522 FOR T. Servi. 100 | 0.25 | î | 17.50 | | | | l | | ı | i | Î | 1 0.5 |
| 10 i | 5.20 | | 2,00 | 52 | 0.31 | 0.61 | ì | 16.30 | 0.1 | 5 | | 1 | | ľ | 1 | ľ | 0.5 |
| 11 1 | 5.20 | | 2.00 | | | 0.50 | | 15.10 | - | | | 1 | | ì | ĺ | Ĩ. | 0.5 |
| 12 1 | 5.00 | | 2,20 | | THE PERSON NAMED IN COLUMN | 0,56 | - | 13.50 | | | | i | | Ĭ | 1 | 1 | 0.5 |
| 13 | 5.00 | | 1.80 | | 0.42 | 0.49 | -8- | 12.70 | | | | 1 | | i | ĺ | i | 0.5 |
| 14 | 4.70 | | 1.00 | | 0.34 | 0.54 | | 12.30 | | | | 1 | | 1 | 1 | ī | 0.5 |
| 15 | 4.60 | - | 1.10 | - | 0,12 | 0.53 | - | 15.80 | | | | i | | 0.02 | ì | ì | 0.5 |
| 16 | 5.00 | 100 | 1.20 | | 0.22 | 0.30 | 1.5 | 13.00 | | | | î | | Ĺ | 1 | i | 1 0.5 |
| 17 | 4.70 | | 1.40 | | 0.25 | 0.34 | | 12.50 | | | | î | | ř | ì | ř | 0.5 |
| 18 | 4,50 | | 1.40 | | 0.43 | 0.42 | 100 | 11.90 | | | | î | | ì | ì | î | 0.5 |
| 19 | 4.60 | ì | 1.50 | 200 | 0.22 | 0.49 | 81 | 13.10 | | | | | | î | ì | ì | 0.5 |
| 20 1 | 4.20 | Ť | 1.40 | 001 | 0.16 | 0.37 | | 14.60 | * | | | ì | | î | i | i · | 0.5 |
| 21 1 | 4.00 | Ť | 1.60 | 5 | 0.15 | 0.26 | | 14.80 | | | | 1 | | î | ì | í | 0.5 |
| 22 | 3.90 | 7 | 1.60 | | 0.09 | 0.21 | | 15.80 | | | | i | | 0.02 | Ì | ì | 0.5 |
| 23 1 | 3.90 | - 12 | 1.60 | | 0.18 | 0.18 | | 12.00 | | | | ì | | Tarkova coroza | i | î | 0.5 |
| 24 1 | 4.00 | | 1.60 | | 0.25 | 0.28 | | 12.20 | | | | î | | ì | ì | į | 1 0.5 |
| 25 1 | 4.00 | 1555 | 1.70 | 19 | 0.31 | 0.51 | dir | 11.70 | | | | ()4 | | i e | ì | î | 0.5 |
| 26 1 | 3,90 | i | 1.70 | 100 | 0.28 | 0.49 | 1020 | 12.20 | | | | i | | É | ï | Í | 0.5 |
| 27 1 | 3.80 | Ť | 1.60 | | 0.37 | 0.59 | - 57 | 12.60 | | | | i | | i i | i | ř | 0.5 |
| 28 1 | | | 1.70 | | 0.13 | 0.50 | | 15.60 | | 1961 H | | i | | 9 | ì | į | 0.5 |
| 29 | 3.70 | 100 | 1.60 | | 0.13 | 0.32 | - 32 | 15.50 | December 1800 | | | | | | i e | i | 0.5 |
| 30 | 3.60 | ï | 1.70 | - | 0.33 | 0.43 | 7 | 13.80 | | 77 EST | | 1 | | ř | ì | F | 0.5 |
| 31 | -425000 S.Stall-W | • | ACCOUNT OF THE | | 0.20 | 0.43 | 21 | 12.30 | E 30000 1 | | | , | | 4 | | 4 | 0.5 |

14

TABLE 2.1: PARTICULATE REMOVAL PROFILE (FEB 1984)

| I DATE I | TU | RB1 | DITY | (F | TU) | | 1 | COAGULANT | i | AID | Ĺ | AID | 1 | Al (mo | g/L) | PH | |
|-------------|------------------|------|-------|-----|--------|--------|-----|-----------|------|------|-----|------|-----|-------------------------------|----------|----|-------|
| i | Raw | Ì | Set. | 1 | Filter | Treat. | 1 | mg/L | 1 | mg/L | l | mg/L | 1 | Raw | Treat. | | |
| 1 | 3.50 | 1 | 1.70 | 1 | 0.23 | 0.44 | 1 | 13.70 | 1 | 0.15 | 1 | | 1 | THE TRANSPORT OF THE PARTY OF | 1 1 | 1 | 0.5 |
| 2 | 3.40 | Ī | 1.80 | Ť | 0.28 | 0.44 | 1 | 11.80 | 1 | 0.15 | 1 | | 1 | | 1 0.05 | Ť | 0.5 |
| 3 | 3.40 | ī | 1.90 | Ĭ | 0.22 | 0.42 | 1 | 13.90 | | | | | 1 | | 1 1 | 1 | 0.5 |
| 4 | 3.30 | 1 | 2.20 | 1 | 0.33 | 0.28 | 1 | 14.20 | 1 | 0.15 | l | | 1 | | 4 T | 1 | 0.5 |
| 5 1 | 3.20 | 1 | 1.90 | Ī | 0.45 | 0.32 | Ĭ | 15.20 | 1 | 0.15 | I | | 1 | | 1 0.04 | Î | 0.5 |
| 6 1 | 3.50 | 1 | 1.60 | 1 | 0.31 | 0.43 | 1 | 13.00 | 1 | 0.15 | 1 | | 1 | | 1 1 | 1 | 0.5 |
| 7 1 | 3.40 | 1 | 1.70 | 1 | 0.19 | 0.30 | 1 | 11.90 | 1 | 0.15 | 1 | | 1 | | 1 1 | 1 | 0.5 |
| 8 1 | | | | | 0.48 | | 1 | 14.90 | ı | 0.15 | L | | 1 | | 1 [| ì | 0.5 |
| 9 1 | 3.30 | 1 | 1.70 | 1 | 0.28 (| 0.43 | 1 | 13.60 | 1 | 0.15 | 1 | | 1 | | 1 1 | 1 | 0.5 |
| 10 | 3.30 | Ī | 1.60 | Ť | 0.18 | 0.26 | 1 | 14.40 | 1 | 0.15 | ı | | 1 | | 1 1 | 1 | 0.5 |
| 11 1 | 3.10 | i | 1.70 | Ê | 0.24 | 0.20 | 1 | 14.90 | î | 0.15 | i | | 1 | | 1 1 | 1 | 0.5 |
| 12 | 3.10 | i | 1,80 | î | 0.24 | 0.28 | 1 | 15.00 | Ì | 0.15 | i | | 1 | | 0.03 | ĺ | 0.5 |
| 13 i | 3.50 | ì | 1.40 | ì | 0.16 | 0.29 | 1 | 13.60 | 1 | 0.15 | Ĺ | | Ť | | 1 1 | 1 | 0.5 |
| 14 1 | | | | | 0.14 | | 1 | 14.30 | 1 | 0.15 | ı | | 1 | | 1 1 | 1 | 0.5 |
| 15 I | 4.40 | Ĕ | 1.10 | ï | 0.22 | 0.23 | ì | 13.40 | 1 | 0.15 | 1 | | 1 | | i î | Î | 0.5 |
| 16 1 | | 75 | | - 4 | 0.27 | 0.22 | 1 | 12.40 | i | 0.15 | 1 | | î | | i i | ì | 1.0 |
| 17 1 | 5.10 | | | - | 0.20 1 | 0.32 | i | 13.80 | i | 0.15 | i | | î | | i i | i | 1.0 |
| 18 1 | 5.30 | 2511 | | | 0.08 | 0.38 | | 15.00 | | | (2) | | Ĩ | | î î | ĵ | 1.0 |
| 19 1 | 3.90 | 100 | | 100 | 0.09 | | 195 | 15.70 | 1 | | 6 | | ì | | 1 0.03 1 | ì | 1 1.0 |
| 20 1 | 3.70 | 3 | | - 3 | - | 0.21 | | 13.10 | - | | • | | Ť | | i i | j | 1 1.0 |
| 21 1 | 3.50 | | | | 0.08 | | | 15.00 | 1,50 | | | | 1 | | î î | î | 1 1.0 |
| 22 1 | 3.50 | | | - | 0.26 | | i | 11.80 | 330 | | 5 | | Ť. | | i î | Ŷ | 1.0 |
| 23 | 3.40 | | | Ÿ | 0.21 | 0.43 | | 14.00 | | | 3 | | î | | 1 1 | i | 1.0 |
| 24 1 | 3.30 | 7. | | | 0.11 | 0.45 | | 14.40 | | | i | | i | | i i | 1 | 1.0 |
| 25 1 | 3.30 | | 19132 | 7 | 0.09 | 0.37 | 3 | 15.10 | 100 | | i | | e i | | 1 1 | i | 1.0 |
| 26 1 | 3.50 | | | | 0.08 | 0.20 | 14 | 16.80 | - | | ĺ | | i | | i i | ï | 1.0 |
| 27 1 | Who are a second | - 0 | | - | 0.27 | 0.20 | | 12.90 | | | i | | i | | i i | i | 1 1.0 |
| 28 1 | | | | | 0.10 | 0.35 | 51 | 31.30 | 1.0 | | i | | i | | î î | | 0.5 |
| 29 1 | | 5.00 | | - A | | 0.20 | 100 | 34.80 | 320 | | i | | ï | | i i | Ĭ | 0.5 |
| 30 1 | | î | | î | | | i | | i | | i | | i | | i i | i | i |
| 31 1 | | i | | Ť | r r | | i | | 1 | | ì | | Ť | | 1 1 | 1 | 1 |

....

TABLE 2.1: PARTICULATE REMOVAL PROFILE (MAR 1984)

| I DATE | TUI | RB I | DITY | (F) | ru) | | 1 | COAGULANT | 1 | | | The same of the sa | | | | | - | I TEMP |
|-----------|-------|------|------|-----|---------|--------|-----|-----------|-----|-----------------|----|--|----|-----------------------|--------|------|-----|--|
| i | Raw | Ï | Set. | Î | Filter | Treat. | ì | mg/L |) m | g/L | (| mg/L | 1 | Raw | Treat. | Raw | | STATE OF THE PARTY |
| 1 | 19.00 | 1 | 2.40 | 1 | 0.14 | 0.15 | 1 | 19.90 | 10. | .15 | l | | ì | and the second second | 1 0.03 | l | 1 | 0.5 |
| 2 1 | 15.80 | i | 1.20 | 1 | 0.10 | 0.18 | 1 | 19.70 | 10. | .15 | | | 1 | | ı | ł | 1 | 1 0.5 |
| 3 1 | 9.70 | 1 | 0.95 | Ī | 0.08 1 | 0.54 | 1 | 20.30 | 10. | . 15 | į. | | ı | | 1 | Į. | 1 | 1 1.0 |
| 4 1 | 8.80 | 1 | 0.91 | 1 | 0.08 | 0.18 | 1 | 19.90 | 10. | .15 | t | | ı | | 0.02 | l | 1 | 1.0 |
| 5 1 | 9.20 | 1 | 1.10 | 1 | 0.10 | 0.20 | 1 | 20.20 | 10. | .15 | | | 1 | | 1 | l. | 1 | 1.0 |
| 6 1 | 8.50 | ì | 1.10 | ĺ | 0.08 [| 0.13 | 1 | 19.00 | 10. | .15 | | | 1 | | 1 | Í, | t | 1 1.0 |
| 7 1 | 8.10 | 1 | 1.40 | 1 | 0.09 | 0.13 | 1 | 20.70 | 10. | .15 | l | | 1 | | 1 | L | J | 1.0 |
| 8 1 | 6.30 | 1 | 1.30 | -1 | 0.09 | 0.15 | I | 21.10 | 10. | .15 | | | 1 | | Ĭ | Í | 1 | 1.0 |
| 9 1 | 7.70 | Î | 1.80 | Ĩ | 0.12 | 0.14 | 1 | 22.30 | 10. | .15 | ľ | | 1 | | 1 | Ĺ | Ţ | 1.0 |
| 10 | 6.20 | 1 | 2.40 | 1 | 0.44 | 0.28 | 1 | 20.40 | 10. | .15 | | | 1 | | 1 | Ì | 1 | 1 1.0 |
| 11 1 | 5.30 | 1 | 1.30 | 1 | 0.11 F | 0.43 | i | 19.40 | 10. | .15 | | | 1 | | 1 0.06 | Ī | Î | 1 1.0 |
| 12 | 5.10 | i | 1.60 | 1 | 0.21 | 0.24 | 1 | 22.70 | 10. | .15 | | | 1 | | 1 | Ĺ | 1 | 1 1.0 |
| 13 | 5.00 | 1 | 1.30 | 1 | 0.43 1 | 0.36 | 1 | 16.20 | 10. | .15 | | | 1. | | 1 | | 1 | 0.5 |
| 14 1 | 4.70 | 1 | 1.20 | 1 | 0.39 | 0.47 | Ĺ | 12.10 | 10. | .15 | ĺ | | 1 | | i i | Í | 32 | 0.5 |
| 15 I | 5.60 | 1 | 1.20 | Ì | 0.15 [| 0.47 | I | 13.40 | 10. | .15 | | | 1 | | 1 | ĺ | I | 0.5 |
| 16 | 7.10 | 1 | 1.40 | 1 | 0.24 | 0.43 | 1 | 16.30 | 10. | .15 | ľ. | | 1 | | 1 | | .1. | 0.5 |
| 17 | 5.80 | 1 | 1.30 | 1 | 0.14 | 0.28 | 1 | 14.40 | 10. | .15 | ľ | | 1 | | Î | | 1 | 1 0.5 |
| 18 | 6.80 | Ī | 1.10 | 1 | 0.17 | 0.23 | 1 | 16.60 | 10. | .15 | | | 1 | | 1 0.03 | Ė | 1 | 0.5 |
| 19 | 8.30 | 1 | 1.20 | 1 | 0.46 | 0.23 | 1 | 13.20 | 10. | .15 | | | 1 | | 1 | L | 1 | 0.5 |
| 20 | 6.60 | T | 1.20 | 1 | 0.35 | 0.40 | 1 | 13.20 | 10. | .15 | Ĺ | E\$1. | 1 | 19 | j | | 1 | 0.5 |
| 21 | 14.00 | Î | 1.00 | 1 | 0.54 | 0.54 | I | 16.70 | 10. | .15 | 1 | | 1 | | Î | | Ī | 1 0.5 |
| 22 1 | 83.60 | ì | 1.90 | ì | 0.14 | 0.55 | 1 | 38.40 | | | Ĺ | | 1 | | 1 | | Ĭ. | 0.5 |
| 23 1 | 11.30 | 1 | 1.70 | 1 | 0.13 [| 0.25 | 1 | 20.40 | 10. | .15 | 1 | | 1 | | 1 | | ¥ | 1 0.5 |
| 24 1 | 22.30 | 1 | 1.30 | F | 0.15 | 0.22 | 1 | 20.00 | 10. | .15 | l | | 1 | | 1 | Ě | i. | 0.5 |
| 25 | 14.30 | i | 1.60 | Î | 0.16 | 0.24 | 1 | 19.90 | 10. | .15 | | | 1 | | 1 | | ī | 1 1.0 |
| 26 1 | 9.40 | ī | 1.40 | 1 | 0.46 | 0.17 | 1 | 17.80 | 10. | . 15 | | | 1 | | 1 | F | I. | 1 1.0 |
| 27 1 | 7.10 | i | 1.20 | | 0.11 | 0.41 | 100 | 19.10 | | | 8 | | 1 | | i | | Ì | 1.0 |
| 28 I | 5.90 | i | 1.20 | - | 0.39 1 | 0.20 | 32 | 16.70 | | | | | 1 | | 0.02 | | -E | 1 1.0 |
| 29 1 | 7.20 | i | 1,30 | | 0.59 | 0.61 | | 15.80 | | NO. TAMPICAL IN | | | 1 | | 1 | E. | i . | 1.0 |
| 30 1 | 6.60 | í | 1.20 | | 0.12 | 0.49 | 200 | 20.40 | T . | | | | i | | Ĩ | | î | 1.0 |
| 31 1 | 8.20 | ÷ | 1.30 | 0.5 | 0.08 | 0.23 | | 19.30 | 1 | | É | | | | i | | 4 | 1.0 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (APR 1984)

| I DATE I | TUI | RBI | DITY | (F) | (ט) | | | COAGULANT | | | | | | | | 1 | | ▲ 270 | TEMP DEG. C |
|-------------|-------|-------|------------------|-------|--------|--------|------|-----------|-------|------|---|------|----|-----|--------|-----|-----|--------------|------------------------|
| 1 | Raw | ı | Set. | 1.1 | Filter | Treat. | 1 | mg/L | l n | ng/L | ĺ | mg/L | 1 | Raw | Treat. |] F | Raw | | |
| 1 l | 7.00 | 1 | 1.20 | 1 | 0.09 | 0.13 | ī | 22.00 | 1 0 | .15 | 1 | | l | | 1 0.02 | 1 | | t | 1 2.5 |
| 2 | | | | | 0.10 | 0.12 | 1 | 21.10 | 10 | .15 | 1 | | 1 | | I. | 1 | | I | 1 3.0 |
| 3 1 | 5.90 | 1 | 1.40 | 1 | 0.08 | 0.13 | 1 | 19.30 | 10 | .15 | 1 | | I. | | 1 | 1 | | 1- | 1 3.5 |
| 4 1 | 5.00 | 1 | 1.20 | 1 | 0.20 | 0.16 | | 18.60 | 1 0 | .15 | 1 | | L | | 1 | 1 | | ¥. | 1 3.5 |
| 5 I | | 277 | | (74) | 0.08 | 0.19 | 1 | 20.80 | 10 | .15 | 1 | | 1 | | 1 | 1 | | T | 1 3.5 |
| 6 1 | | | | | 0.07 | 0.12 | | 29.00 | 10 | .15 | 1 | | i | | £. | 1 | | V | 1 3.5 |
| 7 1 | | 10.50 | | | 0.08 | 0.11 | 1 | 19.10 | 1 0 | .15 | Ĺ | | 1 | | l. | 1 | | i | 1 3.5 |
| 8 1 | | | | | 0.07 | 0.13 | | 20.60 | | | ı | | 1 | | 1 0.02 | 1 | | T. | 1 3.5 |
| 9 1 | | 100 | | | 0.08 | 0.16 | 1.0 | 23.10 | | | | | 1 | | ľ | 1 | | I. | 4.0 |
| 10 1 | | | | | 0.09 1 | 0.11 | | 20.70 | 7 100 | | ĺ | | Ĩ | | ľ. | 1 | | Ť. | 1 4.0 |
| 11 | | | | 0.27 | 0.09 | 0.15 | - | 20.30 | | | 1 | | 1 | | Î | t | | T | 1 4.0 |
| 12 | | | | | 0.09 | 0.12 | 200 | 21.10 | | | î | | Ĺ | | 1 | £ | | Ĩ | 1 4.5 |
| 13 | | | | | 0.13 | 0.18 | | 18.50 | e | | i | | Ĩ | | 1 | 1 | | ľ | 5.0 |
| 14 | | | | | 0.07 | 0.13 | | 19.20 | | | i | | i | | Î. | Ĭ | | 1 | 1 5.5 |
| 15 | | 2.0 | | 100 | 0.14 | | | 23.70 | | | i | | 1 | | 0.02 | 1 | | 1 | 5.5 |
| 16 | 2.70 | | | | 0.06 | | | 20.90 | | | î | | 1 | | Ī | 1 | | İ | 6.0 |
| 17 I | 2.10 | | | | 0.09 | | | 22.20 | | | ì | | ì | | Î | 1 | | i | 6.0 |
| 18 | 2.30 | | | 10.00 | 0.09 | | 100 | 22.80 | Two. | | i | | i | | i | T | | ľ | 6.0 |
| 19 I | 2.30 | | | - 2 | 0.11 | 0.09 | 100 | 20.30 | | | i | | i | | 1 | Ť | | Ĭ | 6.0 |
| 20 1 | 2.20 | 100 | 0.45 | 2.74 | | 0.13 | 1.50 | 20.00 | | | î | | i | | 7 | Ť | | i | 1 6.5 |
| 21 1 | 2.00 | | | | 0.09 | 0.12 | | 22.70 | | | i | | ì | | ì | ì | | ľ | 1 6.5 |
| 22 | 3.20 | | | 185 | 0.10 | 0.12 | | 22.60 | S | | ì | | 1 | | i | 1 | | Ť | 1 7.0 |
| 23 1 | 3.00 | | | 177 | 0.11 | 0.12 | | 22.00 | - | | ì | | i | | 0.02 | î | | È | 6.0 |
| 24 | 2.30 | | 0.30 | | 200 | 0.10 | | 21.30 | | | î | 4 | ì | | i | ì | | Î | 6.0 |
| 25 I | 5.40 | 1.5 | | 172 | 0.10 | 0.10 | 100 | 18.20 | | | ì | | ì | | Ī | i | | 1 | 1 6.0 |
| 26 | 3.90 | | 0.40 | 250 | 0.10 | 0.11 | 100 | 16.20 | 20 -1 | | i | | î | | i | Ť | | 1 | 6.5 |
| 27 I | 3.50 | 7 | 0.31 | | 0.11 | 0.14 | | 16.20 | | | i | | î | | Í | ì | | î | 7.0 |
| 28 1 | 4.70 | 011 | Alterial control | | 0.10 | 0.11 | | 16.10 | 5 | | 1 | | i | | ì | ì | | Í | 8.5 |
| 29 I | | - 3 | | | 0.11 | 0.13 | | 15.60 | 2 | | i | | i | | 0.05 | i | | ì | 9. |
| 30 | | | | | 0.11 | 0.20 | | 22.10 | | | î | | i | | 1 | ì | | ĺ | 1 10. |
| 31 | 23.70 | 1 | 1.09 | I. | 0.15 | 0.20 | 1 | 22.10 | | . 10 | i | | | | i | i | | ì | i |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (MAY 1984)

| DATE | 1 | TU | RB1 | DITY | (F | TU) | | 10 | COAGULANT | 8 | OAG. AID | | | METAL 1 | | | рН | TEMP |
|------------|----|-------|-------|-------------|-----|--------|--------|-------|-----------|------|-----------------|------|---|---------|----------|-----|--------|--------|
| | ì | Raw | 1 | Set. | 1 | Filter | Treat. | 1 | mg/L | jr | ng/L | mg/L | l | Raw | Treat. | Raw | Treat. | l . |
| - - | 1 | 59.40 | | 1.20 | 1 | 0.11 | 0.10 | 1 | 30.70 | 10 | .20 | | 1 | | 1 1 | | 1 | 1 10.0 |
| 2 | 1 | 42.40 | 1 | 0.77 | 1 | 0.08 | 0.10 | 1 | 33,20 | 10 | .20 | | 1 | | 1 1 | | J | 1 10. |
| 3 | 1 | 31.40 | 1 | 1.00 | 1 | 0.08 | 0.08 | 1 | 26.50 | 1 0 | .20 | | 1 | | 1 1 | | 1 | 1 10. |
| 4 | L | 24.70 | ŀ | 0.85 | 1 | 0.09 | 0.09 | 1 | 21.30 | 10 | 1.15 | | 1 | | 1 | | 1 | 1 10. |
| 5 | 1 | 19.00 | 1 | 0.92 | 1 | 0.07 | 0.08 | 1 | 20.90 | 10 | 1.15 | | 1 | | 1 1 | | 1 | 1 10.5 |
| 6 | Ī | 17.00 | 1 | 1.30 | Į | 0.09 1 | 0.08 | 1 | 19.60 | 1 0 | .15 | | ı | | 0.03 | | 1 | 1 11.0 |
| 7 | 1 | 15.70 | 1 | 0.74 | 1 | 0.09 | 0.10 | 1 | 21.50 | 10 | 1.15 | | 1 | | 1 1 | | 1 | 1 11.5 |
| 8 | 1 | 25.80 | - [| 0.77 | 1 | 0.08 | 0.09 | 1 | 19.70 | 1 0 | .20 | | 1 | | T I | | 1 | 11.0 |
| 9 | 1 | 34.50 | 1 | 1.24 | 1 | 0.08 | 0.09 | 1 | 25.70 | 10 | .25 | | 1 | | 1 1 | | 1 | 1 11. |
| 10 | Ť | 24.50 | 1 | 0.93 | ì | 0.09 | 0.08 | î | 23.90 | 10 | .25 | | 1 | | 1 1 | | 1 | 1 11.0 |
| 11 | 37 | 18.30 | 1 | 0.95 | 1 | 0.14 | 0.13 | Ĺ | 20.20 | 1 0 | 1.15 | | 1 | | 1 1 | | 1 | 1 12.0 |
| 12 | Ť | 15.70 | Ĭ. | 0.82 | 1 | 0.11 | 0.11 | 1 | 20.40 | 10 | .15 | | ı | | I î | | ì | 1 12.0 |
| 13 | 1 | 10.10 | i | 1,20 | 1 | 0.12 | 0.11 | 1 | 20.30 | 10 | .15 | | 1 | | 1 0.06 1 | | 1 | 1 12. |
| 14 | | 11.30 | Ť | 0.97 | 1 | 0.11 | 0.12 | Ī | 20.90 | 10 | .15 | | 1 | | 1 1 | | 1 | 1 12.0 |
| 15 | Ť | 9.70 | ī | 1.40 | 1 | 0.12 | 0.12 | 1 | 19.80 | 10 | .15 | | 1 | | i i | | Ì | 1 12.0 |
| 16 | ì | 6.80 | i | 0.82 | î | 0.09 | 0.10 | 1 | 20.20 | 1 0 | .15 | | i | | 1 1 | | Ì | 1 12.0 |
| 17 | | 5.10 | ı | 0.73 | 1 | 0.07 | 0.09 | 1 | 17.60 | 1 0 | .15 | | 1 | | 1 1 | | 1 | 1 12.0 |
| 18 | i | 11.00 | ï | 0.77 | ſ | 0.10 | 0.11 | 1 | 16.20 | 10 | 1.15 | | 1 | | 1 | | j | 1 12. |
| 19 | i | 6.30 | 1 () | 0.40 | | 0.08 | 0.11 | 1 | 18.50 | 10 | .15 | | 1 | | ì | | Ĭ. | 1 13.0 |
| 20 | i | 3.70 | i | 0.41 | ì | 0.09 | 0.09 | 1 | 21.90 | 1 0 | .15 | | 1 | | 1 1 | | 1 | 1 13.0 |
| 21 | ì | 3.10 | | 0.59 | î | 0.09 | 0.08 | 1 | 18.70 | 10 | .15 | | 1 | | 0.03 | | 1 | 1 13.0 |
| 22 | Ī | 3.30 | | 0.63 | ì | 0.10 | 0.11 | Ì | 18.10 | 10 | .15 | | Ī | | 1 | | Î. | 1 14.0 |
| 23 | ì | 3.70 | 1 | 0.64 | | 0.09 | 0.10 | 1 | 15.80 | 1 0 | .15 | | 1 | | 1 1 | | T | 1 14.0 |
| 24 | i | 2.70 | Ī. | 0.59 | i | 0.10 | 0.10 | ì | 16.20 | 10 | .15 | | 1 | | î î | | Ĩ | 1 14. |
| 25 | î | 7.90 | î | 0.98 | 0.5 | 0.10 | 0.11 | | 15.40 | 5 8 | - A | | ĺ | | 1 1 | | Í | 1 14. |
| 26 | i | 5.60 | | 0.49 | 1 | 0.11 | 0.11 | | 15.20 | | | | i | | i i | | 1 | 1 15. |
| 27 | 12 | 3.90 | | 0.78 | i | 0.12 | 0.12 | 121 | 14.50 | | | | ī | | 1 1 | | 1 | 1 15. |
| 28 | i | 4.10 | | 0.86 | i | 0.01 | 0.11 | | 14.90 | 3 10 | The state of | | i | | 1 1 | | | 1 15. |
| 29 | i | 13.40 | -35 | 0.73 | İ | 0.11 | 0.11 | 200 | 17.20 | | in terminal III | | 1 | | i i | | 1 | 1 15.0 |
| 30 | i | 11.30 | 100 | 0.61 | ÷ | 0.09 | 0.10 | | 21.60 | | | | i | | 1 1 | | 1 | 1 15.0 |
| 31 | i | 5.00 | | Dec College | 1 | 0.06 | 0.07 | 1.79) | 20.80 | 0.00 | 250 100 10 12 | | í | | 1 | | í | 1 14. |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JUN 1984)

| DATE | TUI | RB1 | DITY | (F' | ru) | | | COAGULANT | | | | FILTER AID | | | | | l 1 | рН | 9 | TEMP |
|------|-------|------|-------------|------|--------|--------|-----|-----------|------|------|----|---------------|---|-----|-----|--------|--------|------------|----|------|
| 1 | Raw | 1 | Set. | 1 | Filter | Treat. | I | mg/L | l n | ng/L | 1 | mg/L | ļ | Raw | ı | Treat. | Ra | w Treat. | | |
| 1 | 3.10 | 1 | 0.37 | 1 | 0.05 | 0.06 | 1 | 20.60 | 10 | .15 | 1 | | 1 | | 1 | | J | 1 | 1 | 15.0 |
| 2 | 3.30 | | | | 0.06 | 0.06 | Ī | 20.30 | 10 | .15 | 1 | | 1 | | -1 | | I. | ī | 1 | 15.5 |
| 3 | 3.00 | 1 | 0.56 | ì | 0.07 | 0.08 | i | 20.10 | 10 | .15 | 1 | | 1 | | 1 | 0.05 | 1 | 1 | 1 | 16.5 |
| 4 | 3.30 | 1 | 0.57 | 1 | 0.07 | 0.08 | 1 | 20.20 | 10 | .15 | 1 | | 1 | | 1 | | Ī | ı | 1 | 16.5 |
| 5 | 2.40 | 1 | 1.20 | Ĩ | 0.08 | 0.09 | 1 | 20.40 | 10 | .15 | 1 | | 1 | | 1 | | I | 1 | 1 | 18.0 |
| 6 1 | 3.00 | 1 | 0.72 | 1 | 0.09 [| 0.10 | ï | 21.00 | 10 | .15 | 1 | | 1 | | 1 | | L | I | 1 | 19.5 |
| 7 1 | 4.80 | Ť | 0.57 | 1 | 0.10 | 0.10 | 1 | 19.80 | 10 | .15 | 1 | | 1 | | 1 | | f | 1 | 1 | 21.0 |
| 8 1 | 23.00 | 1 | 0.60 | 1 | 0.11 | 0.14 | 1 | 19.80 | 10 | .15 | 1 | | 1 | | 1 | | 1 | 1 | Ĺ | 20.5 |
| 9 1 | 6.90 | ī | 0.33 | 1 | 0.10 | 0.10 | Î | 19.90 | 10 | .15 | l. | | 1 | | 1 | | 1 | 1 | 1 | 20.5 |
| 10 I | 6.70 | Ť | | | 0.09 | 0.10 | 1 | 21.00 | 10 | .15 | 1 | | 1 | | 1 | 0.07 | 1 | 1 | T | 20.5 |
| 11 | 7.50 | Î | 0.68 | 1 | 0.10 | 0.09 | 1 | 19.50 | 10 | .15 | 1 | | 1 | | 1 | | 1 | 1 | Ĩ. | 20.5 |
| 12 | 5.10 | - | 0.76 | i | 0.10 | 0.10 | Ĺ | 19.70 | 10 | .15 | 1 | | 1 | | 4 | | i | 1 | 1 | 21.0 |
| 13 I | 4.20 | | 0.32 | 1 | 0.10 | 0.11 | ì | 19.20 | 10 | .15 | 1 | | 1 | | 1 | | 1 | 1 | 1 | 21.0 |
| 14 | 6.70 | - 38 | 0.54 | î | 0.12 | 0.12 | Ī | 19.80 | 10 | .15 | 1 | | 1 | | 1 | | I. | 1 | 1 | 21.0 |
| 15 | 6.60 | | AMILESON BU | - | 0.12 | 0.13 | ì | 20.30 | 1 0 | .15 | ī | | 1 | | 1 | | I | ì | 1 | 20.5 |
| 16 1 | 6.10 | | | | 0.12 | 0.12 | Î | 20.10 | 10 | .15 | 1 | | 1 | | 1 | | 1 | ı | 1 | 20.5 |
| 17 I | 3.30 | - 2 | 0.28 | | 0.12 | 0.12 | 1 | 19.30 | 10 | .15 | 1 | | 1 | | 1 | | 1 | 1 | 1 | 20.5 |
| 18 | 4.50 | Ť | 0.45 | 1 | 0.14 | 0.14 | 1 | 19.40 | 10 | .15 | 1 | | 1 | | - 1 | | 1 | 1 | ı | 20.5 |
| 19 | 4.10 | Ť | 0.35 | 1 | 0.13 | 0.13 | Î | 19.70 | 10 | .15 | 1 | | 1 | | - 1 | | 1 | Ĭ | 1 | 21.0 |
| 20 | 3.00 | ì | 0.96 | î | 0.13 | 0.11 | î. | 20.60 | 10 | .15 | ı | | 1 | 30 | 1 | | 1 | 1 | 1 | 22.0 |
| 21 | 2.90 | - 5 | | 0.53 | 0.13 | 0.12 | Í | 19.50 | 10 | 1.15 | ı | | 1 | | 1 | | 1 | 1 | 1 | 22.5 |
| 22 | 3.60 | - 5 | | 1.7 | 0.14 | 0.14 | 1 | 20.30 | 10 | .15 | ì | | ı | | Î | | Ī | ì | ı | 22.5 |
| 23 | 3.80 | - | | -8 | 0.15 | 0.14 | i | 18.90 | 10 | .15 | ł | | ĺ | | ì | | 1 | 1 | 1 | 22.5 |
| 24 | 3.50 | 74 | | 183 | 0.12 | 0.13 | - 2 | 19.70 | | | ī | | ï | | Î | 0.09 | i | ī | 1. | 22.5 |
| 25 | 4.80 | | | 1000 | 0.10 | 0.10 | | 20.40 | | | i | | ì | | - 1 | | 1 | ī | 1 | 22.5 |
| 26 | 4.20 | ï | | 570 | 0.10 | 0.10 | 330 | 19.50 | | | î | | t | | ĺ | | ĺ | Ĭ | ľ | 22.0 |
| 27 1 | 29.00 | i | | | 0.10 | 0.10 | - | 24.10 | | | Î | | 1 | | i i | | ĺ | ī | t | 22.5 |
| 28 1 | 18.00 | - 3 | | 115 | 0.07 | 0.07 | 200 | 22.10 | | | î | | ï | | - 1 | | 1 | 1 | Ť | 22.5 |
| 29 | 8.60 | - 9 | | | 0.07 | 0.08 | | 20.10 | W 31 | | ì | | i | | i | | 1 | í | Ī | 23.0 |
| 30 | 7.60 | | 0.74 | 187 | 0.10 | 0.09 | | 20.60 | | | i | | í | | i | | i | i | i | 22.5 |
| 31 | | | | i | | | i | | 1 | | ï | | 1 | | i | | ì | i | i | |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JUL 1984)

| l DATE | TUI | RB] | DITY | (F' | ru) | | 1 | COAGULANT | | COAG. | Die. | | | METAL METAL | | 1 | | рН | The second | TEMP EG. C. |
|-----------|-------|-----|------|-------|----------|----------------|-----|-----------|-----|--------------|------|------|----|-------------|--------|----|-----|--------|------------|----------------|
| i | Raw | 1 | Set. | 1 | Filter (| Treat | . 1 | mg/L | 1 | mg/L | 1 | mg/L | ſ | Raw | Treat, | ı | Raw | Treat. | \$1 710s | |
| 1 1 | 6.60 | ı | 0.60 | ĺ | 0.10 | 0.0 | 9 | 20.30 | ì | 0.15 | 1 | | ı | | I | 1 | | Č | ł | 22.0 |
| 2 1 | 4.70 | 1 | 0.77 | 1 | 0.09 | 0.0 | 9 1 | 20.20 | 1 | 0.15 | f. | | 1 | | 0.07 | 1 | | .0 | 1 | 22.5 |
| 3 | 5.60 | 1 | 0.40 | 1 | 0.11 | 0.3 | 1 1 | 20.80 | 1 | 0.15 | 1 | | J | | 1 | 1 | | t | 1 | 22.0 |
| 4 | 4.80 | 1 | 0.80 | 1 | 0.12 | 0.3 | 1 | 19.00 | 1 | 0.15 | 1 | | 1 | | 1 | 1 | | t | 1 | 23.0 |
| 5 1 | 3.70 | 1 | 0.87 | 1 | 0.11 | 0.1 | 1 | 19.80 | 1 | 0.15 | 1 | | 1 | | ľ | 1 | | I | 1 | 22.5 |
| 6 | 12.80 | 1 | 0.53 | 1 | 0.11 | 0.3 | 1 | 19.90 | 1 | 0.15 | 1 | | 1 | | 1 | J | | £ | 1 | 22,5 |
| 7 | 6.60 | Ī | 0.90 | 1 | 0.11 | 0.1 | 1 | 20.90 | 1 | 0.15 | 1 | | 1 | | Ĭ. | 1 | | ì | 1 | 22.5 |
| 8 | 4.20 | 1 | 1.00 | 1 | 0.11 | 0.1 | 0 1 | 19.70 | 1 | 0.15 | ı | | 1 | | 0.10 | 1 | | 1 | 1 | 22.5 |
| 9 | 19.60 | 1 | 0.92 | 1 | 0.11 | 0.3 | 1 1 | 19.40 | 1 | 0.15 | 1 | | 1 | | t | ¥. | | 1 | 1 | 22.5 |
| 10 | 15.30 | 1 | 0.46 | ſ | 0.13 | 0.3 | 4 | 20.30 | 1 | 0.15 | 1 | | ı | | I | 1 | | 1 | 1 | 22.5 |
| 11 | 9.70 | 1 | 0.55 | 1 | 0.12 | 0.3 | 2 1 | 20.00 | Ī | 0.15 | 1 | | 1 | | -L | i | | 1 | 1 | 22.5 |
| 12 | 6.20 | 1 | 0.62 | 1 | 0.07 | 0.0 | 1 8 | 18.40 | 1 | 0.15 | 1 | | 1 | | 1 | 1 | | 1 | 1 | 22.5 |
| 13 | 5.30 | Ĭ. | 0.45 | ſ | 0.08 | 0.0 | 9 1 | 20.30 | 1 | 0.15 | 1 | | Î | | Î | 1 | | Ĩ | 1 | 22.5 |
| 14 | 3.50 | ı | 0.41 | 1 | 0.07 | 0.0 | 6 1 | 19.80 | 1 | 0.15 | ì | | 1 | | 1 | 1 | | 1 | 1 | 22.5 |
| 15 I | 4.50 | ì | 0.32 | 1 | 0.06 | 0.0 | 7 1 | 20.40 | 1 | 0.15 | 1 | | 1 | | 1 | 1 | | T | 1 | 22.5 |
| 16 i | 5.60 | 100 | 0.78 | i | 0.08 | | 7 1 | 19.00 | 100 | | i | | i | | Ť | Ť | | î | Ī | 23.5 |
| 17 i | 7.90 | 811 | 0.82 | i | 0.06 | | 6 1 | 19.70 | ì | 0.15 | i | | 1 | | İ | 1 | | î. | 1 | 23.0 |
| 18 | 7.10 | | 0.72 | | 0.06 | | 6 1 | 19.60 | - 6 | 200-20 | Ĺ | | Ĺ | | 0.07 | Ť | | ï | Î | 21,5 |
| 19 i | 5.10 | 19 | 0.94 | | 0.07 | | 8 i | 20.00 | | | l | | 1 | | | Ť. | | Ť. | ì | 21.0 |
| 20 I | 4,80 | i | 0.80 | 100 | 0.07 | | 7 1 | 19.90 | 100 | | i | | 1 | | Ť | î | | i | Ì | 21.5 |
| 21 | 4.10 | ī | 0.44 | | 0.06 | | 7 1 | 20,00 | | | i. | | Ĺ | | ř | Ĩ | | Î. | Ī | 22.0 |
| 22 | 2,40 | î | 0.41 | ((5)) | 0.07 | | 7 1 | 19.60 | - | HEIDE GARAGO | i | | 1 | | 0.07 | i | | î | ì | 22.5 |
| 23 | 1.90 | Ť | 1.75 | 191 | 0.08 | | 7 1 | 13.90 | 8. | | 7 | | î | | i | 1 | | ì | ì | 24.0 |
| 24 | 2.50 | i | 0.52 | 100 | 0.08 | | 9 1 | 16.00 | | | i | | î | | i | Í | | i | ı | 22.5 |
| 25 1 | 2.70 | Ē | 0.61 | | 0.06 | | 7 | 16.20 | 15 | | ř | | î | | i | i | | T | 1 | 23.0 |
| 26 | 2.10 | ì | 0.55 | 100 | 0.06 | | 7 | 15.20 | - 5 | | i | | ì | | 1 | 1 | | î | Ì | 23.5 |
| 27 | 3.60 | Ė | 0.45 | 100 | 0.07 | | 7 1 | 15.80 | 731 | | í | | î | | i | 1 | | ì | ı | 23.0 |
| 28 1 | 1.90 | i | 0.68 | 1.54 | 0.08 | | 7 | 15,50 | | | ì | | i | | ì | i | | 1 | i | 23.0 |
| 29 1 | 1.90 | ì | 0.70 | | 0.09 | | 7 | 13.50 | - 7 | | 1 | | T. | | ì | î | | i | í | 23.0 |
| 30 1 | 2,90 | | 0.70 | 18 | 0.11 | and the second | 8 | 16.30 | | The Contract | Î | | i | | | i | | i | i | 23.0 |
| 31 1 | 2.50 | i | 0.37 | | 0.07 | | 0 1 | 15,30 | | | 6 | | 1 | | 0.10 | í | | î | i | 24.0 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (AUG 1984)

| DATE | TUI | RB1 | DITY | (F' | ru) | | 10 | OAGULANT | I CO | AID | | FILTER AID | 1 | METAL F | g/L) | | рН | 1 1 1 D | TEMP |
|------------|-------|-------|------|------|----------------|--------|-------|----------|-----------------|------|-----------|---------------|----|---------|--------|-----------|-----|---------------|------|
| 1 | Raw | ı | Set. | 1 | Filter | Treat. | ı | mg/L | l m | g/L | l | mg/L | 1 | Raw | Treat. | | | | |
| 1 | 1.90 | 1 | 0.42 | 1 | 0.08 | 0.09 | l | 15.40 | 0. | . 15 | i | | I | | l | l | I | I | 24.5 |
| 2 | 1.90 | 1 | 0.51 | 1 | 0.08 | 0.09 | 1 | 14.80 | 0. | .15 | ı | | 1 | | 1 | ľ | Í | 1 | 24.5 |
| 3 | 1.40 | 1 | 0.21 | 1 | 0.08 | 0.10 | 1 | 15.00 | 0. | .15 | 1 | | 1 | | Í. | 1 | 1 | 1 | 24.5 |
| 4 1 | 1.40 | 1 | 0.49 | 1 | 0.07 | 0.07 | 1 | 15.70 | 0. | .15 | 1 | | 1 | | 1 | Į. | 1 | 1 | 24.5 |
| 5 1 | 1.50 | 1 | 0.15 | 1 | 0.06 | 0.06 | 1 | 13.40 | 0. | .15 | 1 | | ı | | Ĭ . | ĺ | j | 1 | 25.0 |
| 6 1 | 1.50 | 1 | 0.37 | 1 | 0.07 | 0.07 | Ĭ. | 15.40 | 10. | .15 | 1 | | i | | 0.08 | Ĭ | 1. | 1 | 24.0 |
| 7 1 | 3.40 | 1 | 0.19 | 1 | 0.07 | 0.08 | 1 | 14.80 | 0. | . 15 | 1 | | 1 | | 1 | 1 | -1: | t | 24.0 |
| 8 1 | 2.40 | 127 | 1.70 | | 0.08 | 0.07 | I | 14.80 | 0. | .15 | ı | | 1 | | ĺ | ı | Y | Ĭ. | 25.0 |
| 9 | 4.90 | | 0.20 | ï | 0.07 | 0.09 | ١ | 15.40 | 0. | .15 | ı | | 1 | | Ĭ | l | 1 | 1 | 25.0 |
| 10 i | 2.90 | | 0.50 | 177 | 0.08 | 0.09 | î | 15.30 | 0. | .15 | 1 | | 1 | | 1 | ĺ | 1 | 1 | 25.5 |
| 11 i | 3.20 | | 0.20 | | 0.08 | 0.08 | 1 | 15.00 | 0. | .15 | ı | | Ī | | Î. | ĺ | ï | ï | 25.5 |
| 12 | 3.70 | | 0.62 | 100 | 0.08 | 0.08 | 1 | 14.80 | 10. | .15 | ı | | ſ | | Î | l | ì | I | 24.5 |
| 13 | 3.90 | 93 | 1.10 | 1770 | 0.09 | 0.09 | (Elli | 14.60 | | | l | | 1 | | 1 | ĺ | 1 | 1 | 23.0 |
| 14 | 3.90 | - | 0.30 | 12 | 0.09 | 0.08 | 55 | 15.20 | | | i | | ľ | | 1 | ĺ | Ī | Î | 23.5 |
| 15 | 2.50 | | 0.36 | | 0.09 [| 0.09 | - | 15.00 | N | | ĺ | | ì | | 0.07 | l | 1 | 1 | 23.0 |
| 16 | 2.40 | 100 | 0.30 | 150 | 0.10 | 0.10 | 1521 | 14.90 | | | 1 | | Ĺ | | 1 | l | 1 | 1 | 24.0 |
| 17 | 1.80 | 100 | | | 0.09 | 0.08 | - | 14.90 | | | ì | | ï | | i | 1 | î | 1 | 24.0 |
| 18 | 1.40 | | | | 0.08 | 0.08 | | 14.50 | | | 1 | | î. | | i | I | ì | î | 25.0 |
| 19 | 1.60 | 150 | | 320 | 0.08 | | | 14.70 | No. of the last | | i | | ì | | 0.09 | l | ì | i | 25.0 |
| 20 1 | | - | | | 0.07 | 0.07 | | 14.60 | | | i | | î | | i | 1 | i | ì | 24.0 |
| 21 | 2.70 | | | | 0.08 | 0.08 | | 14.50 | | | i | | î. | | ì | ĺ | î | ì | 24.0 |
| 22 | | | | | 0.08 | 0.10 | 77 | 15.30 | 190 | | i | | î | | ì | 1 | i | i | 24.5 |
| 23 | 5.00 | | | | 0.09 | 0.08 | 100 | 15.60 | | | i | | i | | i i | i i | i | i | 24.5 |
| 24 | 3.70 | | | | 0.08 | 0.07 | | 14.70 | | | i | | ì | | Î | | ï | î | 24.5 |
| 25 1 | 3.50 | 11511 | | | 0.07 | 0.07 | | 16.10 | | | ì | - | i | | | i | i | ì | 24.0 |
| 26 | 2.90 | | 0.25 | .00 | 0.09 | 0.08 | 30 | 15.30 | E 1042 | | i | | 1 | | 1 | ì | î | i | 23.0 |
| 27 | 10.00 | | 0.54 | JE. | 0.09 | 0.09 | | 16.10 | | | i | | i | | Î | Ē | ï | i | 24.5 |
| 28 | 4.50 | 350 | | | 0.11 | 0.11 | | 16.20 | - | | i | | 1 | | i | ì | Î | i | 24.5 |
| | 7.60 | | | 1.40 | 0.11 | | 200 | 14.30 | | | 1 | | 8 | | 0.13 | ì | ŕ | i | 24.5 |
| 29 | | (5) | | 100 | and the second | 0.12 | - 3 | 15.20 | X | | | | 1 | | 1 | i | | 1 | 24.5 |
| 30 31 | 12.00 | | | | 0.12 | 0.12 | 1091 | 15.20 | | | a. | | 1 | | | 1 | | i. | 24.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (SEP 1984)

| DATE | TUI | RB1 | DITY | (F' | ru) | | 1 | COAGULANT | | | FILTER AID | | | | | рН | I TEM | |
|------|-------|------|---------|------|---------|------------|-----|-----------------|------|-----|---------------|---|-----|-----------|-----------|--------|-------|------|
| i | Raw | l | Set. | Į. | Filter | Treat. | 1 | mg/L | mg/I | , 1 | mg/L | Î | Raw | Treat. | Raw | Treat. | i | |
| 1 1 | 5.40 | ı | 0.81 | 1 | 0.10 | 0.09 | 1 | 15.50 | 0.13 | 1 | | I | | 1 | 1 | ı | 1 24 | .5 |
| 2 | 10.20 | 1 | 0.73 | 1 | 0.10 | 0.10 | 1 | 14.10 | 0.09 | -1 | | Ī | | 0.08 | 1 | I | 1 24 | .0 |
| 3 [| 8.80 | L | 0.70 | 1 | 0.11 | 0.11 | 1 | 16.00 | 0.18 | 1 | | 1 | | I | 1 | I. | 1 23 | .5 |
| 4 1 | 6.50 | 1 | 1.07 | 1 | 0.10 | 0.10 | 1 | 15.20 J | 0.14 | - 1 | | 1 | | ţ | 1 | 1 | 1 23 | .0 |
| 5 1 | 5.10 | 1 | 1.20 | 1 | 0.10 | 0.11 | 1 | 15.10 | 0.15 | 1 | | 1 | | 1 | ſ | 1 | 1 22 | .0 |
| 6 1 | 5.00 | T | 1.11 | Ť | 0.09 | 0.10 | 1 | 14.80 | 0.14 | 1 | | 1 | | ĵ | 1 | 1 | 1 22 | .0 |
| 7 | 31.80 | 1 | 0.80 | 1 | 0.12 | 0.11 | 1 | 18.00 I | 0.16 | 1 | | ı | | 1 | 1 | 1 | 1 22 | .0 |
| 8 | 40.40 | 1 | 0.75 | 1 | 0.10 | 0.10 | 1 | 27.20 | 0.18 | 1 | | Ī | | Ï - | 1 | ĺ | 21 | .5 |
| 9 | 23.00 | Ī | 1.60 | 1 | 0.10 | 0.11 | 1 | 22.80 | 0.12 | - 1 | | 1 | | Ì | 1 | 1 | 1 21 | .0 |
| 10 | 13.10 | 1 | 0.97 | 1 | 0.11 | 0.12 | 1 | 19.60 | 0.17 | 1 | | 1 | | 1 | 1 | 1 | 1 21 | .0 |
| 11 (| 8.20 | 1 | 0.84 | 1 | 0.09 | 0.09 | 1 | 15.30 | 0.16 | 1 | | 1 | | j | Ĭ | ì | 21 | .0 |
| 12 | 6.10 | 1 | 0.98 | 1 | 0.09 | 0.09 | 1 | 14.50 | 0.11 | 1 | | 1 | | Í | į. | 1 | 21 | .0 |
| 13 | 12.00 | | 0.69 | 1 | 0.10 (| 0.10 | ı | 15.10 | 0.17 | 1 | | 1 | | 1 | l . | 1 | 1 21 | .5 |
| 14 | 6.70 | Ī | 0.88 | 1 | 0.10 | 0.11 | 1 | 15.90 | 0.11 | 1 | | 1 | | 1 | l . | 1 | 1 21 | . 5 |
| 15 | 5.20 | i | 0.88 | | 0.08 | 0.09 | 1 | 14.90 | 0.21 | Î | | 1 | | 1 | ĺ. | 1 | 21 | .0 |
| 16 1 | 4.50 | 1 | 0.84 | 1 | 0.09 | 0.09 | 1 | 18.80 | 0.14 | 1 | | 1 | | 0.08 | t | 1 | 1 20 | .5 |
| 17 | 5.10 | 1 | 0.81 | 1 | 0.10 | 0.10 | 1 | 15.00 | 0.12 | 1 | | 1 | | 1 | Ĺ | 1 | 1 20 | .0 |
| 18 | 5.20 | 1 | 0.64 | 1 | 0.10 | 0.11 | 1 | 14.90 | 0.15 | 1 | | 1 | | 1 | 1 | 1 | 1 20 | . 0 |
| 19 1 | 6.50 | 5 | 0.53 | 1 | 0.10 | 0.10 | 1 | 14.70 | 0.16 | 1 | | ï | | 1 | Î | I | 1 20 | . 0 |
| 20 1 | 13.00 | | 0.63 | | 0.10 | 0.10 | 1 | 15.10 | 0.15 | T | | 1 | | 1 100 | ì | 1 | 1 19 | .5 |
| 21 | 7.10 | | 1.10 | i | 0.11 | 0.10 | ì | 14.80 | 0.16 | Î | | ì | | Î | Î | 1 | 21 | .0 |
| 22 | 5.90 | 1 | 0.57 | 1 | 0.09 | 0.09 | 1 | 14.80 | 0.13 | 1 | | 1 | | 1 | Ī | j | 1 19 | .5 |
| 23 1 | 4.50 | | 0.86 | i | 0.11 | 0.12 | 1 | 12.80 | 0.11 | 1 | | 1 | | 0.05 | L | 1 | 1 20 | . 5 |
| 24 | 6.10 | | 0.45 | 1.75 | 0.11 | 0.11 | 17 | 15.30 | 0.19 | ì | | 1 | | Ì | ĺ | Ĩ | 20 | .5 |
| 25 | 9.00 | 177 | 0.64 | I.A. | 0.10 | 0.12 | 1 | 15.40 | 0.12 | 1 | | 1 | | î | ĺ | i | 21 | . 0 |
| 26 | 8.10 | - 20 | 1.21 | | 0.11 | 0.12 | 17 | 15.30 I | | -17 | | i | | ī | i. | 1 | 1 21 | - 34 |
| 27 1 | 5.80 | 19.5 | 1.08 | | 0.10 | 0.09 | 17. | 15.00 I | | - | | 1 | | 1 | ì | í | 1 19 | |
| 28 1 | 5.60 | | 100,000 | 10 | 0.11 | 0.09 | 38 | 15.30 | | -5 | | Ī | | ì | ì | ì | 1 19 | |
| 29 1 | 5.20 | 8 | 1.08 | 8 | 0.10 | 0.10 | | 15.30 | | | | Ī | | 1 | i | 1 | 1 18 | |
| 30 1 | 4.10 | | 1.12 | | 0.10 | 0.09 | 100 | 16.10 | | 100 | | î | | 0.07 | ĺ | î | 1 18 | |
| 31 | | 4 | | | | Teletra de | 100 | 17/74/5-1 | - 1 | | | | | g = 2 2 2 | 0 | 8 | | |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (OCT 1984)

| I DATE | TUI | RB1 | DITY | (F: | ru) | | 1 | COAGULANT | 100 | | 1.5 | | 117 | | RES. (| | рН | I TEMP |
|-----------|-------|-----|------|------|---------|--------|---------|-----------|--------|------|-----|-----------|-----|-----|--------|-----|--------|--------|
| i | Raw | Ţ | Set. | 1 | Filter | Treat. | I | mg/L | l r | mg/L | ı | mg/L | L | Raw | Treat. | Raw | Treat. | i |
| 1 | 4.30 | 1 | 1.20 | i | 0.10 | 0.10 | 1 | 15.30 | 10 |).13 | l | 10.767112 | 1 | | 1 1 | | 1 | 1 17.0 |
| 2 | 4.70 | 1 | 1.05 | Ţ | 0.10 | 0.10 | 1 | 15.20 | 10 |).19 | 1 | | 1 | | 1 1 | | ı | 1 16.5 |
| 3 | 20.60 | 1 | 1.03 | 1 | 0.10 | 0.10 | 1 | 21.90 | 10 |).18 | 1 | | 1 | | 1 1 | | 1 | 1 16.5 |
| 4 | 9.70 | 1 | 1.35 | 1 | 0.10 | 0.10 | 1 | 16.70 | 10 |).12 | 1 | | 1 | | 1 1 | | 1 | 1 16.0 |
| 5 | 7.00 | 1 | 1.10 | 1 | 0.08 | 0.09 | 1 | 14.70 | 10 |).19 | ı | | i | | 1 1 | | 1 | 1 16.0 |
| 6 | 5.40 | 1 | 0.59 | 1 | 0.09 | 0.10 | T | 15.60 | 10 |).10 | 1 | | 1 | | 1 1 | | Ì | 1 16.0 |
| 7 | 4.80 | 4 | 0.44 | 1 | 0.10 | 0.10 | 1 | 14.40 | 10 |).12 | 1 | | 1 | | 1 1 | | 1 | 16.0 |
| 8 | 4.80 | 1 | 0.76 | Ţ | 0.10 | 0.10 | 1 | 15.40 | 10 |).18 | 1 | | 1 | | 1 1 | | 1 | 1 16.5 |
| 9 1 | 6.00 | 1 | 0.52 | Į | 0.10 | 0.11 | T | 15.30 | 10 |).15 | 1 | | 1 | | 1 1 | | J | 1 16.5 |
| 10 I | 4.70 | 1 | 0.63 | Í | 0.10 | 0.10 | L | 15.70 | 10 |).16 | 1 | | 1 | | j j | | l | 1 16.5 |
| 11 | 4.20 | 1 | 0.76 | Ī | 0.10 | 0.10 | Ī | 16.00 | 10 |).14 | 1 | | 1 | | 1 0.07 | | I | 1 17.0 |
| 12 | 2.80 | 1 | 0.61 | 1 | 0.10 | 0.10 | 1 | 16.30 | 10 |).17 | 1 | | 1 | | 1 1 | | 1 | 1 17.0 |
| 13 I | 2.20 | 1 | 0.60 | 1 | 0.10 | 0.10 | F | 15.50 | 10 |).15 | 1 | | 1 | | 1 1 | | ĺ | 17.0 |
| 14 1 | 2.40 | Ĩ | 0.56 | 1 | 0.09 | 0.09 | Ī | 15.20 | 10 | 0.13 | 1 | | 1 | | 1 0.08 | | 1 | 1 17.0 |
| 15 1 | 2.70 | 1 | 0.42 | ı | 0.10 | 0.10 | 1 | 16.70 | 10 | 0.18 | 1 | | 1 | | 1 3 | | 1 | 1 17.0 |
| 16 1 | 2.60 | 1 | 0.55 | 1 | 0.11 | 0.11 | 1 | 14.80 | 10 | 0.19 | 1 | | 1 | | 1 | | Î | 1 17.0 |
| 17 1 | 2.30 | 1 | 0.26 | 1 | 0.08 | 0.08 | Î | 14.70 | 10 | 0.08 | 1 | | 1 | | 1 1 | | 1 | 1 17.0 |
| 18 i | 2.40 | 119 | 0.38 | | 0.08 | 0.09 | ì | 15.80 | 1 0 | 0.18 | Ī | | 1 | | 1 1 | Į | 1 | 1 17.0 |
| 19 | 4.90 | Ĩ. | 0.41 | 1 | 0.08 | 0.09 | 1 | 15.00 | 10 | 0.18 | 1 | | 1 | | 1 1 | ľ | 1 | 1 17.0 |
| 20 1 | 5.80 | ì | 0.39 | 1 | 0.08 [| 0.08 | i | 15.60 | 1 0 |).12 | 1 | | ĩ | | i i | ĺ | I. | 1 17.0 |
| 21 | 3.90 | 39 | 0.41 | 10 | 0.10 | 0.08 | ĺ | 15.30 | 10 | 0.17 | 1 | | 1 | | 1 1 | | 1 | 1 17.0 |
| 22 | 4.50 | | 0.35 | Ť | 0.09 | 0.10 | ī | 14.40 | | | 1 | | 1 | | 1 | | 1 | 1 17.0 |
| 23 | 5.70 | | 0.60 | | 0.10 | 0.10 | 100,731 | 15.60 | 120 | | 1 | | 1 | | 0.04 | | ì | 1 16.0 |
| 24 | 3.60 | 177 | 0.47 | Î | 0.09 | 0.10 | 1 | 15.00 | 10 | 0.18 | 1 | | 1 | | ì | | 1 | 1 16.0 |
| 25 1 | 2.90 | | 0.42 | 110 | 0.10 | 0.11 | | 15.10 | 9 | | 1 | | ì | | i i | | l | 1 15.0 |
| 26 | 4.30 | | 0.43 | CS. | 0.11 | 0.10 | 150 | 15.30 | 20 100 | | 1 | | Î | | 1 | ĺ | 1 | 1 15.0 |
| 27 1 | 3.50 | | 0.38 | - | 0.10 | 0.10 | | 14.20 | | | í | | Î | | T i | Ĩ | i | 1 15.0 |
| 28 I | 3.90 | 101 | 0.31 | | 0.10 | 0.10 | | 14.30 | .00 | | İ | | i | | i i | | 1 | 15.0 |
| 29 | 4.60 | - 5 | 0.50 | | 0.09 | 0.10 | | 15.00 | | | I | | ï | | i i | | i | 1 15.0 |
| 30 1 | 5,90 | | 0.40 | | 0.09 | 0.10 | 1.41 | 21.00 | 150 | | i | | Ė | | î î | | 1 | 1 15.0 |
| 31 I | | 4.6 | | - 56 | 0.08 | 0.09 | (25) | 14.30 | 37 | | ì | | î | | ř l | | il. | 1 15.0 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (NOV 1984)

| DATE | TU | RBI | IDITY | (F' | TU) | | 1 | COAGULANT | COAG. | | | | METAL I | | | рН | D | TEMP |
|------|-------|-------|-------|-------|---------|--------|------|--|------------------------|---|------|---|---------|--------|-----|--------|--------------|------|
| ļ | Raw | 1 | Set. | 1 | Filter | Treat. | l | mg/L | mg/L | l | mg/L | l | Raw | Treat. | Raw | Treat. | (30) | |
| 1 | 23.10 | 1 | 1.45 | 1 | 0.10 | 0.09 | 1 | 16.90 | | | | 1 | | 1 1 | | ı | I | 14.5 |
| 2 1 | 16.00 | 1 | 1.71 | 1 | 0.08 | 0.09 | 1 | 25.10 | 0.18 | 1 | | 1 | | 1 1 | | I | J | 14.0 |
| 3 | 16.20 | 1 | 1.61 | 1 | 0.09 | 0.09 | 1 | 19.60 | 0.24 | Ī | | ł | | T I | | ı | ŀ | 13.0 |
| 4 | 12.80 | 1 | 2.53 | 1 | 0.09 1 | 0.09 | 1 | 25.10 | 0.20 | 1 | | 1 | | 1 1 | | ı | 1 | 12.5 |
| 5 1 | 17.70 | 1 | 1.29 | 1 | 0.09 | 0.09 | 1 | 20.30 | 0.10 | 1 | | I | | 1 1 | | I | 1 | 12.5 |
| 6 1 | 11.70 | 1 | 0.86 | 1 | 0.09 | 0.09 | 1 | 21.60 | 0.18 | 1 | | 1 | | 1 1 | | 1 | 1 | 12.0 |
| 7 1 | 7.20 | 1 | 0.84 | 1 | 0.09 | 0.09 | 1 | 18.80 | 0.10 | 1 | | ł | | 1 1 | | Ŀ | 1 | 11.5 |
| 8 1 | 17.00 | 1 | 1.11 | 1 | 0.10 | 0.10 | 1 | 15.40 | 0.18 | 1 | | 1 | | 0.04 | | ŀ | 1 | 11.5 |
| 9 1 | 22.00 | 1 | 0.48 | 1 | 0.09 | 0.10 | 1 | 18.80 | 0.19 | 1 | | 1 | | 1 1 | | J | 1 | 11.0 |
| 10 I | 22,60 | ì | 0.53 | i | 0.09 | 0.10 | 1 | 21.50 | 0.13 | 1 | | 1 | | 0.07 1 | | 1 | 1 | 10.5 |
| 11 1 | 14.50 | | 1.80 | 4 | 0.10 | 0.11 | Ĺ | 21.70 | 0.21 | 1 | | Ī | | 1 1 | | . 1 | I | 10.5 |
| 12 | 9.20 | 1997 | 1.39 | 100 | 0.11 | 0.11 | 1 | 23.70 | 0.17 | 1 | | 1 | | 1 | | 1 | 1 | 10.0 |
| 13 | 7.30 | 0.7 | 0.95 | i | 0.11 | 0.11 | 1 | 20.30 | 0.09 | 1 | | 1 | | 1 1 | | 1 | 1 | 9. |
| 14 | 5.90 | | 0.68 | 1 | 0.10 | 0.10 | ľ | 19.40 | 0.18 | 1 | | 1 | | 1 1 | | I | 1 | 9.0 |
| 15 (| 17.80 | | 1.32 | ı | 0.11 | 0.11 | 1 | 20.70 | 0.19 | 1 | | 1 | | 1 1 | | Í | 1 | 8.5 |
| 16 1 | 25.50 | (3) | 1.21 | 100 | 0.12 | 0.12 | Î | 21.90 | 0.09 | 1 | | Ĩ | | 1 1 | | ſ | 1 | 8.5 |
| 17 | 16.80 | 18: | 1.01 | 1633 | 0.13 | 0.13 | | 19.40 | 0.26 | 1 | | 1 | | 1 1 | | I | Ĺ | 8.0 |
| 18 | 12.40 | (0) | 0.55 | 100 | 0.12 | 0.15 | | 21.50 | 0.15 | 1 | | 1 | | 1 1 | | Ĭ | 1 | 7. |
| 19 1 | 10.60 | 191 | 0.73 | 150 | 0.12 | 0.12 | | 19.60 | 0.21 | 1 | | t | | 1 1 | | ſ | I | 7.0 |
| 20 | 7.60 | | 0.71 | 1.5 | 0.12 | 0.14 | | 16.80 | 0.10 | 1 | | 1 | | 0.03 | | t | 1 | 6.5 |
| 21 | 7.50 | | 0.52 | 1,41 | 0.10 | 0.13 | 100 | 15.00 | 0.25 | 1 | | Ī | | 1 1 | | ĺ | 1 | 5.5 |
| 22 | 16.10 | 7.0 | 0.88 | 355 | 0.10 | 0.12 | 163 | 16.50 | | î | | ì | | 1 1 | | i | 1 | 5.5 |
| 23 | 28.50 | | 0.74 | - 20 | 0.10 | 0.11 | | 23.40 | | 1 | | Î | | 1 1 | | 1 | ſ | 4.5 |
| 24 | 17.00 | | 0.49 | | 0.08 | 0,10 | | Annual Contract of the Contrac | 0.13 | ï | | ì | | i i | | i | i | 4.0 |
| 25 1 | 15.00 | - | 0.42 | | 0.10 | 0.10 | (6) | | 0.16 | ĺ | | ı | | 0.03 | | 1 | 1 | 4.0 |
| 26 | 16,30 | 100 | 0.44 | | 0.10 | 0.10 | | 17.30 | | í | | i | | i | | Ĩ | 1 | 4.0 |
| 27 1 | 18.80 | 11069 | 0.66 | | 0.12 | 0.12 | 170 | 15.80 | A A THE SAME | 1 | | ì | | E I | | Ĩ | Î | 4. |
| 28 | 21.80 | | 1.21 | | 0.12 | 0.11 | - 57 | 16.40 | | | | ì | | 1 1 | | î | Î | 5.0 |
| 29 1 | 17.00 | - 50 | 0.59 | 1.356 | 0.10 | 0.10 | | 21.00 | (40) = 1 | ï | | ì | | i i | | 1 | 1 | 5.0 |
| 30 1 | 16.70 | | 0.65 | | 0.17 | 0.17 | | 20,60 | All - darling and side | 1 | | i | | 1 1 | | i | ì | 5.0 |
| 31 1 | | i i | 0.03 | 1 | J. 1 | 0.17 | 1 | 20.00 | | 1 | | | | Y 2 | | . 4 | | |

...

TABLE 2.1: PARTICULATE REMOVAL PROFILE (DEC 1984)

| ATE | | RB: | DITY | (F) | (O) | | 15 | COAGULANT | | | 77. | | 6 | | | <u> </u> | рН | 1.50 | TEMP |
|----------|-----------------|-----|----------------------|------|--------|--------|--------|-----------|-------|----------------------|-----|------|----|-----|--------|--------------|--------|------|------|
| i | Raw | Ì | Set. | 1 | Filter | Treat. | 1 | mg/L | 1 | mg/L | I | mg/L | 1 | Raw | Treat. | Raw | Treat. | | |
| 1 | 16.70 | 1 | 0.78 | 1 | 0.11 | 0.11 | ı | 20.90 | 1 | 0.13 | 1 | | 1 | | Ī | t | 1 | 1 | 4.5 |
| 2 | 13.10 | 1 | 0.62 | 1 | 0.11 | 0.11 | 1 | 28.10 | 1.0 | 0.28 | 1 | | 1 | | 1 | 1 | 1 | 1 | 4.5 |
| 3 | 16.80 | 1 | 1.34 | 1 | 0.12 | 0.12 | 1 | 20.80 | 1 (| 0.13 | 1 | | L | | Ī | I | 1 | ı | 4.0 |
| 4 | 21,50 | 1 | 0.86 | 1 | 0.12 | 0.13 | 1 | 19.60 | 1 1 | 0.24 | 1 | | 1 | | Î | 1 | 1 | 1 | 4.0 |
| 5 | 17.30 | 1 | 0.41 | 1 | 0.11 | 0.13 | 1 | 20.80 | 1 (| 0.13 | ı | | 1 | | 4 | 1 | 1 | I | 2.5 |
| 6 1 | 16.70 | 1 | 0.48 | î. | 0.10 | 0.12 | 1 | 19.80 | 1.0 | 0.11 | 1 | | 1 | | 1 | L | 1 | ı | 2.5 |
| 7 1 | 33.80 | 1 | 1.01 | 1 | 0.11 | 0.12 | 1 | 23.40 | 1 (| 0.24 | 1 | | 1 | | Ĺ | l. | 1 | 1 | 2.0 |
| 8 | 32.90 | 1 | 0.76 | 1 | 0.11 | 0.12 | 1 | 29.50 | 1 (| 0.13 | 1 | | 1 | | 1 0.03 | 1 | 1 | 1 | 1.0 |
| 9 1 | 16.00 | 1 | 0.35 | 1 | 0.11 | 0.17 | 1 | 29.90 | 1.0 | 0.23 | 1 | | 1 | | 1. | 1 | 1. | I | 1.0 |
| 10 | 14.70 | î | 0.55 | i | 0.10 | 0.18 | 1 | 19.90 | 1.0 | 0.27 | ı | | 1 | | 1 | ľ | i | 1 | 1.0 |
| 11 | Service Control | i | 0.50 | ì | 0.10 | 0.18 | 1 | 17.30 | 1 (| 0.27 | 1 | | Ĩ. | | | Ĩ | 1 | 1 | 1.0 |
| 12 | | | 0.58 | î | 0.10 | 0.14 | 1 | 17.00 | 1 (| 0.13 | 1 | | 1 | | 1. | Ť | I | 1 | 1.0 |
| 13 | | | | | 0.12 | 0.15 | ī | 19.60 | 11 | 0.13 | 1 | | 1 | | ř | ĺ | Î | 1 | 1.5 |
| 14 | | | | - | 0.14 | 0.13 | 100 | 18.50 | | | 1 | | 1 | | 1 | 1 | 1 | 1 | 1.5 |
| 15 | | 35 | | | 0.12 | 0.15 | | 24.20 | | | Ĺ | | ī | | £ | Î | i | I | 2.0 |
| 16 | | | | | 0.17 | 0.24 | | 19.30 | | SECURIAL DESIGNATION | 1 | | 1 | | Î | î | Ĭ | 1 | 2.0 |
| | 22.00 | 100 | THE SAME DESCRIPTION | | 0.14 | 0.25 | | 20.20 | 127 | C. W. D. S. | î | | i | | 0.02 | Ť | 1 | i | 2.5 |
| 20000 00 | 15.00 | | | | 0.17 | 0.21 | YEE CO | 23.30 | 15. 3 | | ì | | î | | 1 | T | ī | 1 | 2.5 |
| 19 | | . 3 | 0.68 | - 0 | 0.13 | 0.17 | | 21.80 | | | 1 | | ì | | ï | ĺ | ĩ | I | 2.5 |
| 20 | | | | (20) | 0.15 | 0.18 | 10 | 19.40 | | | î | | î. | | ì | 1 - | ì | ŀ | 2.5 |
| 21 | | 100 | | 10 | 0.13 | 0.15 | 040 | 18.60 | 181 × | | i | | i | | 4 | Î | ì | i | 2.0 |
| 22 | | | | | 0.35 | 0.16 | 100 | 21.60 | F | | i | | Ť | | i | î | ì | i | 2.0 |
| 23 | | | | | 0.18 | 0.25 | | 25.30 | | | i | | í. | | 1 | i | î. | ì | 2.0 |
| 24 | | | | | 0.15 | 0.21 | 10.5 | 34.80 | | | ì | | Ĵ. | | ì | i | , i | ì | 1.5 |
| 25 I | | | | | 0.20 | 0.19 | | 25.50 | | | ì | | i | | ŕ | Í | ì | ì | 1.5 |
| 26 | | | | | 0.16 | 0.19 | | 22.00 | - | | ï | | ï | | r | î | i | i | 1.0 |
| 27 | | 150 | | | 0.15 | 0.20 | | 20.40 | | | i | | Ť | | | ì | ř | i | 1.0 |
| 28 | | 15 | | 200 | 0.19 | | 15 | 20.00 | | | i | | i | 36 | ì | ř | Ŷ | i | 1.0 |
| 29 | | | | | 0.22 | | | 21.60 | | | 1 | | i | | i | 1 | j. | ì | 1.0 |
| | | | | | | 0.19 | | 22.80 | - | | 1 | | i | | i i | 1 | i | | 1.5 |
| 30 | | 75 | | 1.7 | - DA | | | 20.30 | | | 1 | | 1 | | | 1 | ş. | 1 | 2.0 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JAN 1985)

|) ATE | استا | TUF | BI | DITY | (F: | ru) | | | C | COAGULANT | 150 | | FILTER AID | 5 | | 12 | | рĤ | TEMP |
|----------|------|------|------|------|------|---------|-----|--------|---------|-----------|----------|--|---------------|-----|-----|----------|-----|--------|------------------------------|
| i | I | Raw | 1 | Set. | 1 | Filter | 1 | Treat. | 1_ | mg/L | 1 1 | mg/L | mg/L | _[_ | Raw | Treat. | Raw | Treat. | and the second second second |
| 1 [| 2 | 6.00 | 1 | 2.40 | 1 | 0.17 | 1 | 0.17 | 1 | 22.50 | 1 0 | .20 | | 1 | | 1 1 | | 1 | 1 2.0 |
| 2 1 | 4 | 2.10 | 1 | 2.80 | 1 | 0.14 | 1 | 0.21 | 1 | 25.00 | 1 0 | .13 | | 1 | | 1 1 | |) | 2.0 |
| 3 [| 2 | 1.00 | 1 | 3,50 | 1 | 0.15 | 1 | 0.22 | 1 | 20.90 | 1 0 | .20 | | 1 | | 1 1 | | 1 | 1.5 |
| 4 [| 1 | 8.50 | 1 | 2.20 | 1 | 0.12 | 1 | 0.24 | 1 | 21.90 | 10 | 1.12 | | 1 | | 1 1 | | 1 | 1 1.5 |
| 5 1 | 2 | 6.30 | 1 | 1.70 | 1 | 0.13 | 1 | 0.19 | 1 | 21.50 | 10 | .13 | | 1 | | 1 1 | | 1 | 1 1.0 |
| 6 1 | 5 | 7.30 | 1 | 1.60 | 1 | 0.18 | Ü | 0.25 | 1 | 31.50 | 10 | .32 | | 1 | | 1 0.03 | | Ī | 1.0 |
| 7 1 | 3 | 1.30 | | 1.25 | 1 | 0.11 | Ť | 0.19 | ı | 27.90 | 10 | .27 1 | | 1 | | 1 1 | | 1 | 1 1.0 |
| 8 1 | | 5.20 | | 1.34 | 1 | 0.16 | 1 | 0.16 | 1 | 24.60 | 10 | .11 | | 1 | | 1 1 | | 1 | 0.5 |
| 9 1 | 1 | 5.30 | î | 1.15 | 1 | 0.12 | Ť | 0.16 | 1 | 20.80 | 10 | .13 | | 1 | | 1 1 | | 1 | 0.5 |
| 10 I | 1 | 9.00 | 1 | 1.27 | ı | 0.12 | 100 | 0.16 | 1 | 20.10 | 10 | .12 | | 1 | | 1 1 | | ì | 0.5 |
| 11 1 | - 5 | 2.70 | î | 1.57 | 8 | 0.13 | Î. | 0.17 | i | 20.00 | 10 | .13 | | , | | 1 1 | | i | 0.5 |
| 12 1 | | 4,30 | í | 1.73 | | 0.14 | i | 0.22 | 0.57111 | 18.80 | 10 | .27 | | 1 | | i i | | Ĭ | 0.5 |
| 13 1 | | 6.70 | 1 | 1.53 | 2.4 | 0.17 | ì | 0.33 | 200 | 20.50 | 10 | .17 | | 1 | | 1 1 | | Î | 0.5 |
| 14 1 | | 3.30 | ì | 1.65 | 8 | 0.15 | 1 | 0.35 | Ī | 20.70 | 1 0 | 0.13 | | i | | i i | | Ĵ | 0.5 |
| 15 | | 8.60 | î | 1.70 | | 0.16 | 1 | 0.34 | | 16.00 | | | | 4 | | 1 0.03 1 | | î | 0.5 |
| 16 | | 8.30 | î | 1.13 | 10.0 | 0.16 | ř | 0,25 | | 16,40 | 0 8 | | | i | | 1 1 | | i | 0.5 |
| 17 1 | | 7.90 | i | 1.37 | | 0.16 | Ė | 0.31 | 77 | 14.00 | 5 | | | i | | i i | | Ť | 0.5 |
| 18 | | 7.20 | î | 0.97 | | 0.16 | î. | 0.23 | 100 | 15.00 | - | HEAV THE SECTION AND | | î | | 1 1 | | î | 0.5 |
| 19 | | 7.20 | 550 | 0.98 | | 0.16 | ř. | 0.25 | | 14.60 | 20.13 | | | i | | i i | | í | 0.5 |
| 20 1 | | 8.60 | i | | | 0.16 | i | 0.21 | 255 | 14.70 | 0 | | | i | | 1 0.04 1 | | i | 1 0.5 |
| 21 1 | | 8.70 | i | 1.10 | | 0.19 | ï | 0.26 | 1.00 | 15.40 | | | | i | | 1 1 | | í | 0.5 |
| 22 | | 9.10 | i | 1.30 | | 0.22 | Í | 0.39 | | 14.60 | | | | i | | î î | | 1 | 0.5 |
| 23 1 | | 7.50 | i | 1.20 | 100 | 0.24 | į. | 0.37 | 250 | 14.10 | 100 Hale | o necessary 200 | | î | | i i | | Ŷ | 0.5 |
| 24 | | 6.50 | ï | 1.20 | | 0.22 | | 0.39 | | 15.00 | | | | i | | i i | | ì | 1 0.5 |
| 25 1 | | 4.80 | 17.0 | 0.80 | | 0.17 | Ť | 0.31 | 0.50 | 15.70 | 100 | sicrear in 16 | | 1 | | 1 1 | | i i | 0.5 |
| 26 1 | | 5.40 | 1.50 | 0.91 | - 21 | 0.13 | Ŷ | 0.19 | 100 | 14.60 | - | | | 1 | | 1 1 | | Ť | 0.5 |
| 27 | | 4.10 | 140 | 0.82 | - 2 | 0.14 | ì | 0.24 | - | 14.60 | | | | 1 | | i i | | 1 | 0.5 |
| 28 | | 4.60 | | 1.20 | | 0.14 | | 0.32 | | 15.10 | a. de | | | 1 | | 1 1 | | Ť | 0.5 |
| 29 | | 3.80 | -33 | 1.10 | 0.00 | 0.16 | | 0.20 | - 10 | 15.60 | 1 | | | Ì | | 0.06 | | i | 0.5 |
| 30 | | 4.20 | | 1.00 | | 0.10 | į. | 0.37 | 12 | 14.90 | He on | | | 1 | | 0.00 | | i | 0.5 |
| 31 | | 3.70 | 1 | 0.93 | | 0.16 | 1 | 0.40 | 350 | 14.90 | GII I NO | C-00/10/05/05/05/05/05/05/05/05/05/05/05/05/05 | | 1 | | 4 4 | | 1 | 1 0.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (FEB 1985)

| DATE | TUF | RBI | DITY | (F) | ru) | | Î | COAGULANT | 1 | AID | 1 | AID | 1 | Al (mo | RES. g/L) | وود تو و د | | TEMP DEG. C. |
|------|------------|-----|---------------------|-----|----------|-----------|-----|-------------|-----|--------------|-------|-----|----|--------|----------------|------------|-----|------------------------|
| ì | Raw | 1 | Set. | 13 | Filter | | | | | | | | | | Treat. | | | in the second |
| 1 | 3.70 | 1 | 1.10 | 1 | 0.18 | 0.33 | 1 | 14.70 | 1 | 0.12 | ı | | i | | 1 1 | | I | 0.5 |
| 2 | 3.30 | T | 1.10 | 1 | 0.12 | 0.29 | - 1 | 13.90 | 1 | 0.13 | 1 | | 1 | | 0.04 | | Í | 0.5 |
| 3 [| 3.60 | 1 | 1.20 | 1 | 0.24 | 0.26 | 1 | 13.40 | Į | 0.11 | 1 | | 1 | | 1 1 | | I. | 0.5 |
| 4 | 3.30 | 1 | 2.10 | Ī | 0.38 | 0.24 | 1 | 12,90 | 1 | 0.22 | 1 | | 1 | | 1 1 | | 1 | 1 0.5 |
| 5 1 | | | | | 0.27 | | 1 | 13.20 | 1 | 0.12 | 1 | | 1 | | 1 1 | | l | 0.5 |
| 6 | 2.90 | 1 | 1.20 | 1 | 0.19 | 0.30 | 1 | 12.50 | 1 | 0.11 | 1 | | 1 | | 1 1 | | 1 | 0.5 |
| 7 1 | 3.00 | I | 1.50 | 1 | 0.28 | 0.27 | 1 | 13.70 | 1 | 0.13 | 1 | | 1 | | 1 1 | | 1 | 0.5 |
| 8 1 | | | | | 0.20 | | 1 | 14.60 | 1 | 0.13 | 1 | | 1 | | 1 1 | | 1 | 0.5 |
| 9 1 | 2.50 | T | 2.15 | 1 | 0.29 | 0.33 | 1 | 14.60 | 1 | 0.13 | Ť | | 1 | | 1 1 | | Ĩ | 0.5 |
| 10 I | | | | | 0.28 | | 1 | 15.70 | 1 | 0.25 | 1 | | ı | | 4 1 | | .0 | 0.5 |
| 11 | 2.40 | 1 | 2.20 | 1 | 0.25 | 0.43 | 1 | 14.40 | 1 | 0.11 | 1 | | 1 | | 1 1 | | 1 | [0.5 |
| 12 | | | | | 0.34 1 | | E | 13.00 | Ĺ | 0.10 | 1 | | 1 | | I J | | 1 | 1 0.5 |
| 13 | | | | | 0.39 | | Ţ | 11.80 | 1 | 0.13 | 1 | | 1 | | 1 0.03 | | 1 | 0.5 |
| 14 | 2.10 | | | | 0.17 | | T | 14.60 | 1 | 0.13 | 1 | | 1 | | I J | | 1 | 0.5 |
| 15 | 2.00 | | | 1 | 0.16 | 0.19 | 1 | 14.50 | Ĺ | 0.12 | 1 | | 1 | | 1 | | l . | 0.5 |
| 16 | 2.00 | | | | 0.13 | | 1 | 15.20 | 1 | 0.12 | 1 | | 1 | | 1 1 | | 1 | 0.5 |
| 17 i | 1.90 | î | 0.81 | Ĩ | 0.11 | 0.14 | 1 | 14.50 | 1 | 0.26 | 1 | | 1 | | 1 1 | | 1 | 1 0.5 |
| 18 | 1.70 | | | | 0.11 | | 1 | 15.60 | 1 | 0.13 | 1 | | 1 | | 1 1 | | 1 | 1 0.5 |
| 19 I | 2.70 | - 6 | | | 0,21 | | 1 | 11.90 | 1 | 0.11 | 1 | | 1 | | 1 1 | | l | 0.5 |
| 20 1 | 1.60 | 1 | 2.20 | 1 | 0.30 | 0.27 | 1 | 14.50 | 1 | 0.13 | 1 | | 1 | | 1 1 | | I. | 1 0.5 |
| 21 | 1.90 | i | 1.49 | ì | 0.44 | 0.30 | 1 | 11.00 | 1 | 0.10 | 1 | | Ĭ. | | -1 1 | | 1 | 0.5 |
| 22 | 1.70 | | | | 0.19 | | - 1 | 14.40 | Ĺ | 0.12 | 1 | | 1 | | 1 1 | | ı | 0.5 |
| 23 [| 50000 0000 | 175 | | Ĩ | 0.14 | 0.24 | 1 | 14.30 | T. | 0.13 | 1 | | Î | | 1 1 | | î. | 0.5 |
| 24 1 | | | | | 0.16 | | | 14.30 | Ĺ | 0.13 | 1 | | 1 | | 1. 1 | | 1 | 0.5 |
| 25 | | | | | 0.14 | | ï | 15.40 | 1 | 0.25 | 1 | | 1 | | î î | | 1 | 0.5 |
| 26 1 | | | | | | 2000 | 100 | 13.80 | 1.5 | | 13.50 | | 1 | | i i | | Ĭ | 0.5 |
| 27 | | | | | | | | 12.50 | | | | | 1 | | 1 1 | | I | 0.5 |
| 28 1 | | | | | | | | 11.10 | | | | | 1 | | 0.05 | | T | 0.5 |
| 29 1 | | ī | 1227/46/48/50/00/00 | i | 7.465.00 | 270507115 | î | HONEARING A | ī | -DOMANIA III | î | | Ĭ | | i | | 1 | 1 |
| 30 1 | | ĺ | | 18 | ì | | i | | 1 | | ì | | Ĩ | | i i | | i | |
| 31 1 | | ì | | ì | | | i | | i | | ï | | Ĺ | | i i | | ï | i |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (MAR 1985)

| DATE I | TU | RB1 | DITY | (F) | ru) | | 1 | COAGULANT | | | | | | METAL I | | | рН | TEMP DEG. C. |
|--------|-------|-----|----------------------|------|---|--------|------|-----------|--------|---|----|------|---|---------|----------|-----|----|---------------------------------|
| i | Raw | 1 | Set. | 1 | Filter | Treat. | ľ | mg/L | m | g/L | ŧ | mg/L | Ī | Raw | Treat. | Raw | | REPORTS TO THE RESIDENCE OF THE |
| 1 | 4.70 | 1 | 1.00 | 1 | 0.59 | 0.61 | 1 | 13.30 | 10. | . 11 | i | | 1 | | 1 1 | | 1 | 0.5 |
| 2 1 | 2.10 | 1 | 0.97 | 1 | 0.11 | 0.46 | 1 | 13.80 | 0. | . 12 | ţ | | 1 | | 1 0.02 1 | ĺ | Ţ | 0.5 |
| 3 1 | 2.10 | 1 | 0.95 | 1 | 0.11 | 0.30 | ı | 15.00 | 10. | . 12 | ŧ | | 1 | | 1 1 | | 1 | 0.5 |
| 4 1 | 7.90 | 1 | 1.10 | 1 | 0.10 | 0.23 | 1 | 14.90 | 0. | . 24 | ŀ | | 1 | | 1 3 | | I | 0.5 |
| 5 1 | 34.60 | 1 | 1.46 | 1 | 0.12 | 0.17 | 1 | 24.60 | 10. | . 12 | l | | 1 | | 1 1 | | Î | 0.5 |
| 6 1 | 17.80 | 1 | 1.85 | 1 | 0.12 | 0.14 | 1 | 21.00 | 0. | .12 | Ĺ | | i | | 1 1 | į. | I | 1 0.5 |
| 7 1 | 12.80 | 1 | 1.16 | 1 | 0.49 | 0.19 | 1 | 18.30 | 0. | . 11 | l | | 1 | | I J | | t | 1 0.5 |
| 8 1 | 11.40 | 1 | 1.43 | 1 | 0.14 | 0.35 | 1 | 18.90 | 10. | . 25 | | | 1 | | i l | į | I. | 1 0.5 |
| 9 1 | 9.90 | 1 | 1.47 | Ť | 0.14 | 0.22 | t | 19.00 | 0. | . 13 | l | | 1 | | 3 1 | į. | 1 | 0.5 |
| 10 | 7.80 | 1 | 1.57 | 1 | 0.18 | 0.19 | 1 | 19.00 | 10. | .13 | 1 | | 1 | | 1 1 | | 1 | 0.5 |
| 11 | 6.60 | 1 | 1.53 | 1 | 0.13 | 0.23 | 1 | 18.90 | 0. | . 13 | Ĺ | | 1 | | 1 1 | | l | 0.5 |
| 12 | 5.00 | 1 | 4.95 | I | 0.44 | 0.30 | 1 | 19.20 | 10. | .13 | ŀ | | 1 | | 1 1 | ĺ. | 1 | 1 0.5 |
| 13 | 5.50 | 1 | 1.00 | 1 | 0.15 | 0.34 | 1 | 18.70 | 0 | . 25 | ı | | 1 | | 1 1 | | 1 | 0.5 |
| 14 1 | 6,60 | Ĭ | 1.33 | T | 0.15 | 0.21 | 1 | 18.60 | 10 | . 12 | l | | 1 | | 0.02 | L | 1 | 0.5 |
| 15 | 6.70 | 1 | 1.55 | 1 | 0.10 | 0.14 | 1 | 19.90 | 0. | . 12 | ľ | | 1 | | 1 1 | | Ĭ. | 0.5 |
| 16 I | 6.90 | 1 | 1.22 | Ť | 0.11 | 0.13 | ı | 19.20 | 0. | . 12 | ĺ | | 1 | | 1 1 | | 1 | 1 0.5 |
| 17 | 7.90 | 1 | 1.33 | 1 | 0.12 | 0.14 | 1 | 20.30 | 0 | . 18 | l | | 1 | | 1 1 | | ľ | 1 0.5 |
| 18 1 | 10.60 | 1 | 1.17 | 1 | 0.41 | 0.14 | 1 | 16.90 | 0. | . 12 | i. | | Î | | I I | | ì | 0.5 |
| 19 I | 30.90 | 1.0 | | | 0.21 | 0.41 | ì | 21.10 | 10. | . 12 | ĺ | | 1 | | 0.04 | | ľ | 1 0.5 |
| 20 | 31.40 | 1 | 1.95 | 1 | 0.23 | 0.37 | T | 23.50 | 10 | .10 | ı | | 1 | | T I | | 1. | 1 0.5 |
| 21 | 20.40 | 1 | 1.74 | 1 | 0.13 | 0.17 | ſ | 22.60 | 0. | . 18 | ľ | | 1 | |) 1 | | Ī | 1 1.5 |
| 22 1 | 13.50 | 1 | 1.80 | 1 | 0.13 | 0.15 | ı | 20.30 | 10. | .10 | ı | | 1 | | 1 1 | | 1 | 1 1.0 |
| 23 | 7.00 | i | 1.10 | Ť | 0.13 | 0.15 | 201 | 19.40 | 10 | .12 | Ĺ | | 1 | | 1 1 | | 1 | 1 1.5 |
| 24 | 6.90 | 1 | 1,10 | 1 | 0.15 | 0.17 | 1 | 19.50 | 10 | . 14 | Ĺ | 2 | 1 | | 1 1 | | I | 1 2.0 |
| 25 1 | 7.50 | ì | - Maria Constitution | | 0.15 | 0.15 | 37 | 19.90 | 10. | . 23 | Î | | î | | 1 | • | I | 1 2.0 |
| 26 | 7.60 | ì | Edit | 2. | 0.15 | 0.18 | i | 15.50 | 10. | . 11 | ſ | | 1 | | 1 3 | | I. | 2.5 |
| 27 1 | 29.50 | 1 | 1.10 | 110 | Table Control of the | 0.24 | - | 25.50 | | 100000000000000000000000000000000000000 | E | | 1 | | 1 1 | | 1 | 3.0 |
| 28 (| 30.00 | ĺ | OF STREET | 2660 | 0.11 | 0.20 | -32 | 25.30 | 10 | . 20 | 1 | | 1 | | i i | | Ĭ | 3.0 |
| 29 1 | 18.80 | | | | 0.13 | 0.20 | 1150 | 20.90 | | | L | | 1 | | 1 1 | | I. | 1 3.5 |
| 30 1 | 16.50 | 3.5 | 1.00 | | 0.14 | 0.15 | | 19.50 | 2 1000 | | L | | ī | | 1 3 | | 1 | 1 4.8 |
| 31 | | | | | 0.15 | 0.15 | | 27,20 | - | | 1 | | 1 | | 0.01 | | i | 1 4.8 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (APR 1985)

| DATE | | RB1 | DITY | (F | ru) | | 1 | COAGULANT | | NG. ID | | | | RES. g/L) | | рН | | EMP |
|------|---------------------------|------|------|-----|--|---------|---|-----------|------|-------------|------|-----|-----|----------------|----------------|--------|----|------|
| | Raw | 1 | Set. | 1 | Filter | Treat. | 1 | mg/L | l mg | /L | mg/I | 1 | Raw | Treat. | Raw | Treat. | 1 | |
| 1 | 105.30 | 1 | 3.46 | 1 | 0.18 | 0.15 | 1 | 39.30 | 0. | 19 | | i | | 1 (| | Ţ | 1 | 4.0 |
| | 98.50 | | | | | 0.15 | 1 | 78.00 | 10. | 29 | | 1 | | 1 1 | | 1 | 1 | 3.5 |
| 3 | A linear mane. | | | | | 0.19 | 1 | 48.20 | 0. | 22 | | 1 | | 1 1 | | 1 | 1 | 3.5 |
| 4 | 61.10 | 1 | 4.01 | 1 | 0.30 | 0.36 | 1 | 47.30 | 0. | 22 | | T. | | 1 1 | | 1 | 1 | 4.0 |
| 5 | 70.60 | 1 | 3.23 | 1 | 0.23 | 0.33 | 1 | 49.90 | 0. | 27 | | 1. | | 1 1 | | 1 | 1 | 4.5 |
| 6 | 104.50 | 1 | 6.76 | 1 | 0.42 | 0.31 | 1 | 48.30 | 1.0. | 15 | | - 1 | | 1 1 | | 1 | 1 | 5.0 |
| | 121.60 | | | | 0.20 | 0.30 | 1 | 52.20 | 10. | 28 | | 1 | | 1 1 | | 1 | 1 | 5.0 |
| 8 | 75.30 | 1 | 4.53 | I | 0.13 | 0.17 | 1 | 60.30 | 10. | 30 | | - 1 | | 1 1 | | 1 | 1 | 5.0 |
| 9 | 71.70 | 1 | 4.24 | 1 | 0.13 | 0.14 | 1 | 48.90 | 0. | 27 | | - 1 | | 1 1 | | I | 1 | 5.0 |
| 10 | 98.50 | 1 | 5,50 | 1 | 0.20 | 0.20 | 1 | 21.60 | 10. | 33 | | 1 | | 1 3 | | 1 | 1 | 5.0 |
| 11 | No. | | 2.94 | 1 | 0.18 | 0.19 | 1 | 32.70 | 0. | 22 | | 1 | | 0.02 | | 1 | i | 5.5 |
| 12 | A THEOR ADMINISTRA | | 1.34 | 1 | 0.15 | 0.17 | 1 | 31.50 | 0. | 26 | | 1 | | 1 1 | | 1 | 1 | 5.5 |
| 13 | TOTAL STREET | Ì | 0.87 | 1 | 0.14 | 0.16 | 1 | 30.00 | 10. | 26 | | 1 | | 1 1 | | 1 | 1 | 6.0 |
| 14 | 44.00 | i | 0.71 | I | 0.18 | 0.18 | 1 | 30.30 | 0. | 15 | | 1 | | 1 1 | ĺ | 1 | 1 | 6.5 |
| 15 | 37.80 | 1 | 1.11 | 1 | 0.16 | 0.20 | 1 | 28.30 | 0. | 30 | | 1 | | 1 1 | | 1 | 1 | 7.0 |
| 16 | 28.50 | 1 | 1.15 | 1 | 0.19 | 0.18 | 1 | 20.80 | 0. | 10 | | 1 | | 1 1 | | 1 | 1 | 7.5 |
| 17 | the state of the state of | | 1.18 | | 0.18 | 0.19 | 1 | 20.20 | 0. | 21 | | Ť | | 1 1 | | Ī | 1 | 7.5 |
| 18 | 46.00 | | 0.91 | 1 | 0.15 | 0.20 | 1 | 26.20 | 10. | 17 | | 1 | | 1 1 | | Ĩ | 1 | 7.0 |
| 19 | 29.80 | 1 | 0.80 | ı | 0.18 | 0.22 | 1 | 26.70 | 0. | 09 | | 1 | | 1 1 | | 1 | 1 | 7.5 |
| 20 | 28.00 | 100 | 0.91 | î | 0.16 | 0.16 | 1 | 24.40 | 0. | 22 | | 1 | | 1 1 | l: | 1 | 1 | 8.0 |
| 21 | 1 | | 1.13 | T | 0.16 | 0.17 | 1 | 19.50 | 0. | 15. | | 1 | | j i | | 1 | 1 | 8.5 |
| 22 | 19.00 | 1 | 0.97 | Ĩ | 0.14 | 0.16 | 1 | 20.80 | 0. | 16 | | 1 | | j. J | | Γ | 1 | 9.0 |
| 23 | 13.20 | 1 | 1.05 | 1 | 0.11 | 0.13 | 1 | 18.80 | 0. | 14 | | 1 | | T 3 | ľ | 1 | 1 | 11.5 |
| 24 | 6.20 | 1 | 1.30 | 1 | 0.11 | 0.14 | 1 | 20.40 | 10. | 14 | | 1 | | 1 1 | | 1 | Î | 13.5 |
| 25 | 11.80 | 17 | 0.77 | 1 | 0.11 | 0.17 | L | 19.20 | 0. | 16 | | ı | | 0.03 | Ě | Ĩ. | 1 | 11.7 |
| 26 | 10.30 | | 0.94 | 15 | 0.10 | 0.12 | ı | 19.80 | 10. | 15 | Ĺ | 1 | | T 3 | [| 1 | 1. | 8.0 |
| 27 | 9.70 | | 1.40 | 15 | Walter I was a long to the | 0.12 | | 20.50 | 10. | 19 | | 1 | | 0.03 | l _e | t | Ī | 8.5 |
| 28 | 9.20 | - | 1.35 | | | 0.13 | 1 | 19.30 | 10. | 12 | | 1 | | ſ | | t | 1 | 9.0 |
| 29 | 1 10.30 | | 1.49 | - | 25/14/15/15/15/15/25 | 0.15 | 1 | 21.10 | 10. | 17 | ĺ | 1 | | I | E | 1 | 1 | 9.0 |
| 30 | 1 10.10 | - 6. | 1.07 | - 6 | 0.11 | 0.13 | | 20.60 | | | | 1 | | 1 | L | 1 | í | 9.0 |
| 31 | | î | | i | 1 | 4-3-3-3 | ĩ | | 1 | | | i | | 1 | | 1 | I | |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (MAY 1985)

| DATE | TU | RB: | DITY | (F' | TU) | | 1 | COAGULANT | | 25200-000-00000 | | AID | | | one_orenover . | | рН | I I I D | TEMP EG. C |
|------------|-------|------|--------------|-----|---------|--------|---|-----------|-----|-----------------|----------|------|----|-----|----------------|-----|----|---------------|---------------|
| i | Raw | ł | Set. | 1 | Filter | Treat. | l | mg/L | 1 n | ng/L | ľ_ | mg/L | 1 | Raw | Treat. | Raw | | | |
| 1 | 10.20 | 1 | 1.04 | 1 | 0.10 | 0.10 | 1 | 20.30 | 10 | .17 | ı | | ı | | 1 1 | | 1 | 1 | 9.0 |
| 2 | 10.20 | 1 | 1.53 | 1 | 0.12 | 0.10 | 1 | 21.10 | 1 0 | 0.09 | I | | 1 | | 1 1 | | 1 | 1 | 10.0 |
| 3 | 14.20 | 1 | 2.81 | 1 | 0.24 | 0.15 | į | 21.30 | 1 0 | .21 | I | | ł | | 1 1 | | I | 1 | 10.5 |
| 4 | 9.20 | 1 | 0.79 | 1 | 0.11 | 0.17 | 1 | 20.50 | 1 0 | .09 | | | 1 | | 1 1 | | 1 | 1 | 11.5 |
| 5 | 13.00 | 1 | 1.24 | 1 | 0.12 | 0.14 | ı | 21.50 | 1 0 | .18 | 1 | | 1 | | 1 1 | | Ĩ. | 1 | 11.5 |
| 6 1 | 16.00 | 1 | 0.80 | 1 | 0.13 | 0.15 | t | 20.70 | 1 0 | .18 | ľ | | 1 | | 1 1 | | 1 | ŀ | 12.8 |
| 7 1 | 10.20 | 1 | 1.06 | 1 | 0.13 | 0.13 | 1 | 21.10 | 10 | .15 | l | | 1 | | 1 1 | | 1 | 1 | 13.5 |
| 8 | 7.20 | 1 | 0.88 | 1 | 0.13 | 0.13 | ı | 20.80 | 10 | .15 | ı | | 1 | | 1 0.06 1 | | 1 | 1 | 13.3 |
| 9 1 | 12.90 | 1 | 1.08 | 1 | 0.17 | 0.14 | 1 | 18.20 | 1 0 | .19 | ĺ | | 1 | | 1 1 | | 1 | 1 | 14.0 |
| 10 | 10.10 | 1 | 1.05 | į | 0.13 | 0.24 | 1 | 20.60 | 10 | .12 | 1 | | į. | | 1 J | | 1 | 1 | 14.7 |
| 11 (| 7.90 | 1 | 1.00 | 1 | 0.12 | 0.13 | 1 | 20.30 | 10 | .20 | l | | 1 | | 4 1 | | 1 | 1 | 14.7 |
| 12 | 5.60 | 1 | 0.81 | ı | 0.13 | 0.13 | 1 | 20.30 | 10 | .07 | Ü | | 1 | | 0.08 | | 1 | 1 | 17.0 |
| 13 | 7.30 | 1 | 0.87 | 1 | 0.13 | 0.12 | 1 | 19.70 | 1 0 | .20 | ľ | | 1 | | T J | | 1 | l | 17.5 |
| 14 1 | 6.40 | 1 | 1.08 | 1 | 0.16 | 0.15 | 1 | 17.70 | 1 0 | .12 | | | 1 | | 1 1 | | ı | 1 | 17.0 |
| 15 (| 4.70 | 1 | 0.50 | 1 | 0.14 | 0.15 | 1 | 19.90 | 10 | .22 | l | | 1 | | 1 0.09 1 | | 1 | 1 | 18.0 |
| 16 [| 7.80 | 1 | 0.70 | 1 | 0.15 | 0.15 | ı | 19.80 | 10 | .07 | 1 | | 1 | | 1 1 | | 1 | 1 | 18.0 |
| 17 (| 5.80 | 1 | 1.18 | 1 | 0.16 | 0.19 | 1 | 21.40 | 1 0 | .09 | ı | | 1 | | 1 1 | | ı | I | 18.0 |
| 18 / | 4.10 | 1 | 0.73 | 1 | 0.15 | 0.16 | 1 | 19.70 | 10 | .13 | Ì | | 1 | | 1 3 | | 1 | 1 | 17.0 |
| 19 I | 11.00 | 1 | 0.45 | 1 | 0.16 | 0.15 | 1 | 20.40 | 1 0 | .22 | l. | | 1 | | 1 1 | | 1 | 1 | 17.0 |
| 20 1 | 14.70 | | 0.83 | 1 | 0.15 | 0.17 | 1 | 20.10 | 1 0 | .10 | ľ | * | 1 | | 1 1 | | 1 | I | 17.0 |
| 21 | 8.10 | 1 | 0.66 | 1 | 0.15 | 0.16 | 1 | 21.00 | 10 | .16 | ĺ | | 1 | | 1 1 | | 1 | Ī | 17.0 |
| 22 | 6.00 | 1 | 1.00 | 1 | 0.15 | 0.15 | 1 | 20.60 | 10 | .15 | Ĺ | | 1 | | J J | | 1 | 1 | 17.0 |
| 23 | 7.70 | 1 | 1.00 | 1 | 0.16 | 0.16 | 1 | 19.80 | 1 0 | .14 | <u> </u> | | 1 | | 1 1 | | 1 | 1 | 17.2 |
| 24 [| 7.00 | 1 | 0.73 | 1 | 0.16 | 0.17 | ı | 19.30 | 10 | .18 | l | | 1 | | i i | | ı | 1 | 17.7 |
| 25 | 5.70 | 33 | 0.64 | 1 | 0.13 | 0.13 | 1 | 20.50 | 1 0 | 0.07 | 1 | | 1 | | 1 1 | | t | 1 | 17.7 |
| 26 | 7.10 | | 0.50 | - | | 0.11 | 1 | 21.90 | 1 0 | .15 | 1 | | ŧ | | 1 1 | | 1 | į. | 17.0 |
| 27 1 | 4.60 | | 1.00 | 100 | | 0.11 | | 20.00 | 1 0 | .16 | 1 | | 1 | | ı i | | į | Î | 18.5 |
| 28 I | 4.50 | - 5 | 0.89 | 1 | 0.11 | 0.12 | | 19.90 | 1 0 | .16 | | | 1 | | 1 1 | | J | 1 | 18.5 |
| 29 1 | 4.00 | 5575 | 0.87 | 1 | 0.11 (| 0.11 | 1 | 19.20 | | | 1 | | 1 | | 1 1 | | ľ | 1 | 18.5 |
| 30 1 | 11.00 | | 0.78 | 100 | 0.13 | 0.11 | 1 | 20.60 | 10 | .17 | l | | t | | 1 1 | | 1 | ĺ | 18.5 |
| 31 | 22.10 | 20 | Jelsey Maria | 13. | 0.13 | 0.14 | - | 19.70 | | | Ĺ | | 1 | | î î | | Ĭ. | Î | 18.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JUN 1985)

| DATE | TÜ | RB] | DITY | (F) | ru) | | 10 | COAGULANT | | | | FILTER AID | 98 | | | ====== | рН | 38. | EMP |
|------|--|-------|------|------|-------------|----------------------|------|-----------|------|------|---|---------------|----|-----|--------|-----------------|--------|-------------------------|------|
| j | Raw | 1 | Set. | 1 | Filter | Treat. | 1 | mg/L | ı | mg/L | 1 | mg/L | I | Raw | Treat. | Raw | | The same of the same of | |
| 1 | 14.20 | 1 | 0.62 | | 0.15 | 0.15 | ı | 19.10 | 1 | 0.21 | 1 | | 1 | | J. | | 1 | 1 1 | 19.0 |
| 2 | 5.40 | 1 | 0.33 | 1 | 0.12 | 0.15 | 1 | 17.90 | Í | 0.12 | 1 | | 1 | | 1 | | 1 | 1 1 | 18.5 |
| 3 1 | 5.30 | 1 | 0.65 | 1 | 0.14 | 0.16 | 1 | 20.00 | 1 | 0.18 | 1 | | 1 | | 1 | | 1 | 1 1 | 18.7 |
| 4 | 7.70 | 1 | 1.01 | Ï | 0.13 | 0.15 | 1 | 24.40 | 1 | 0.17 | 1 | | 1 | | 1 | | T |] | 19.0 |
| 5 | 5.90 | 1 | 0.58 | 1 | 0.15 | 0.16 | 1 | 20.90 | 1 | 0.16 | 1 | | i | | 1 | | I | 1 1 | 19.0 |
| 6 1 | 6.20 | 1 | 0.90 | 1 | 0.15 | 0.17 | 1 | 20.60 | 1 | 0.14 | Ĩ | | 1 | | Ĭ | | I. | 1 1 | 19.0 |
| 7 1 | 6.50 | 1 | 0.97 | Ī | 0.13 | 0.14 | 1 | 21.00 | ı | 0.13 | 1 | | 1 | | 1 | ĺ | L | 1 1 | 19.2 |
| 8 i | | 100 | | 100 | 0.14 | 0.7000 | 1 | 19.90 | 1 | 0.21 | 1 | | 1 | | 1 | [| 1 | 1 2 | 20.0 |
| 9 1 | 8.50 | ì | | | 0.13 | 0.13 | Ť | 19.60 | 1 | 0.10 | 1 | | 1 | | 0.09 | | 1 | 1 2 | 20.2 |
| 10 1 | in the same of the | 1.70 | | | 0.10 | | | 20.10 | i | 0.18 | 1 | | 1 | | ì | | 1 | 1 2 | 21.0 |
| 11 | 5.20 | 376 | | - 8 | 0.11 | | 12 | 19.80 | ì | 0.16 | ì | | 1 | | 1 | | 1 | 1 2 | 21.5 |
| 12 | | | | | 0.14 | 0.14 | | 20.5 | 1.00 | | | | 1 | | 1 1 | 1 | 1 | 1 | 19.5 |
| 13 1 | | | | | 0.13 | | | 20.80 | î | 0.19 | 1 | | ì | | Î | | Ť | 1 2 | 20.0 |
| 14 | | 15 | | 100 | 0.13 | | i. | 19.80 | i | 0.18 | L | | 1 | | i i | | 1 | 1 3 | 19.0 |
| 15 | 13.10 | 38/ | | 877 | 0.20 | | - | 20.80 | | | 1 | | ĺ | | I | Ĭ | 1 | 1 1 | 19.0 |
| 16 | 23.70 | | | | 0.14 | N. 200-0812 (1-1000) | | 20.10 | | | Ĺ | | Ĺ | | 1 | | 1 | 1 1 | 19.0 |
| 17 | 16.00 | .74 | | | 0.16 | | | 18.40 | | | Ĩ | | i | | 1 | | į. | 1 1 | 19.0 |
| 18 | 23.00 | | | -50 | 0.13 | | 3 | 19.50 | -35 | | ì | | i | | i | L | Ĩ | 1 2 | 19.5 |
| 19 | 13.30 | | | | 0.14 | 0.15 | 7 | 22.10 | | | i | | î | | i i | ľ | i | 1 1 | 19.5 |
| 20 1 | 12.00 | | | | 0.14 | 0.15 | | 19.90 | | | i | | î. | | î i | 1 | i | i i | 19:5 |
| 21 | 10.60 | 15 | | | 0.14 | 0.15 | 1.0 | 20.20 | | | ì | | í | | î | | 3. | 1 1 | 19.5 |
| 22 | 29.00 | - 157 | | - 51 | 0.14 | 0.13 | - | 23.20 | | | i | | î | | 0.07 | i | Î | 1 2 | 20.5 |
| 23 | 15.30 | - | | | 0.13 | 0.14 | 107 | 19.00 | | | i | | î | | i | | Ť | | 20.6 |
| 24 | 12.30 | 100 | | - | 0.13 | 0.13 | | 20.00 | 7. | | ì | | i | | i | | î | | 20.5 |
| 25 1 | 10.90 | | | | 0.14 | 0.14 | - | 21.20 | | | i | | 1 | | ī | ĺ | 1 | | 21.0 |
| 26 | 7.80 | | | | 0.15 | 0.15 | 950 | 19.90 | | | Ť | | î | | ī | | i | 18 TI | 21.5 |
| 27 1 | 7.40 | - 5 | | - | 0.15 | 0.16 | 12. | 19.80 | | | i | | i | | ì | l | 1 | 100 | 21.5 |
| 28 1 | 8.30 | 17 | | | 0.14 | 0.14 | - 81 | 20.80 | . 51 | | i | | i | | i | l | i | | 21.5 |
| 29 | 7.30 | - | 0.43 | | | 0.14 | | 19.10 | | | ï | | i | | i | ĺ | 4 | | 22.0 |
| 30 1 | 5.80 | 1.5 | 0.81 | 1100 | PARESTER NA | 0.14 | 167 | 20.20 | | | ï | | i | | i | ĺ | Ť | (8 | 21.5 |
| 30 I | 5.50 | 1 | 0.01 | Ť | 0.15 | 0.11 | i | 20.20 | 1 | V | ì | | i | | i | ř | į. | i | |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JUL 1985)

| DATE | TUI | RBI | DITY | (F: | ru) | <u></u> | 1 | COAGULANT | 3 - | OAG. AID | | | | RES. g/L) | | рН | I I TEMP I DEG. C |
|----------------|-------|------|---|-------|---------|---------|-----|-----------|-----|--|--|---|-----|--------------|-----------|--------|-------------------------|
| i | Raw | ļ | Set. | 1 | Filter | Treat. | ı | mg/L | (n | mg/L | mg/L | 1 | Raw | Treat. | | | |
| 1 | 5.40 | 1 | 0.66 | 1 | 0.13 | 0.13 | 1 | 19.60 | 10 | .15 | ************************************** | 1 | | 1 | l | 1 | 21.8 |
| 2 | 9.80 | 1 | 0.56 | 1 | 0.17 | 0.17 | 1 | 20.00 | 1 0 | 1.13 | | 1 | | 0.06 | | 1 | 22.3 |
| 3 | 9.30 | 1 | 0.60 | 1 | 0.14 | 0.15 | 1 | 20.40 | 1 0 | 15 1 | | 1 | | 1 | Ĺ | t | 22.0 |
| 4 1 | 8.00 | i | 0.53 | 1 | 0.16 | 0.15 | I | 17.70 | 10 | 1.17 | | 1 | | 1 | | 1 | 22.3 |
| 5 1 | 8.50 | 1 | 0.85 | 1 | 0.15 | 0.14 | 1 | 20.00 | 10 | .14 | | 1 | | T 1 | je. | 1 | 23.0 |
| 6 | 6.60 | ŀ | 0.71 | 1 | 0.15 | 0.15 | 1 | 18.70 | 1 0 | 1.12 | | 1 | | 1 1 | | 1 | 23.5 |
| 7 1 | 5.30 | 1 | 0.69 | 1 | 0.15 | 0.14 | 1 | 19.40 | 1 0 | .22 | | 1 | | 1 1 | le . | 1 | 23.5 |
| 8 1 | 9.90 | t | 0.58 | 1 | 0.13 | 0.12 | l | 19.50 | 1 0 | 1.17 | | 1 | | 1 1 | | Ī | 23.5 |
| 9 | 9.20 | l. | 0.47 | I | 0.12 | 0.12 | 1 | 19.90 | 1 0 | 1.19 | | 1 | | T 3 | Ĥ | 1 | 23.5 |
| 10 | 9.60 | 1 | 0.52 | 1 | 0.11 | 0.13 | 1 | 21.00 | 1 0 | .13 | | 1 | | .1. | Ú | 1 | 23.5 |
| 11 | 8.00 | ł | 0.71 | 1 | 0.11 | 0.12 | 1 | 20.80 | 10 | .13 | | ŧ | | 1 1 | | 1 | 23.5 |
| 12 | 7.70 | i | 0.55 | 1 | 0.12 | 0.12 | Ĺ | 21.20 | 10 | .15 | | 1 | | ı | ř. | T. | 23.5 |
| 13 | 12.70 | i | 0.66 | 1 | 0.13 | 0.13 | 1 | 19.50 | 10 | .16 [| | 1 | | 1 3 | Ĭ. | I | 24.5 |
| 14 | 6.90 | 1 | 0.56 | 1 | 0.16 | 0.14 | ī | 20.40 | 1 0 | .10 [| | 1 | | I I | | Ì | 24.5 |
| 15 I | 5.40 | ı | 0.33 | Ť | 0.14 | 0.15 | ì | 19.10 | 1 0 | .18 | | 1 | | i i | | Ī | 25.0 |
| 16 | 5.10 | 1 | | | 0.12 | 0.12 | 1 | 20.60 | 10 | .15 | | 1 | | 1 1 | 0. | 1 . | 25.0 |
| 17 | 4.00 | 1 | 1.35 | 1 | 0.12 | 0.12 | 1 | 21.50 | 10 | .14 | | 1 | | 1 1 | Šii | 1 | 25.0 |
| 18 | 4.00 | ī | 0.94 | 1 | 0.13 | 0.13 | 1 | 17.90 | 10 | .13 | | 1 | | 1 1 | | 1 | 25.0 |
| 19 | 4.30 | | 0.80 | i | 0.16 | 0.18 | 1 | 14.50 | 1 0 | .12 | | 1 | | 1 0 | | I. | 25.5 |
| 20 | 5.90 | 1000 | | | 0.13 | | 1 | 14.50 | 10 | .15 | | 1 | | 0.21 | E . | Ĩ | 24.5 |
| 21 | 4.10 | - | 0.46 | i | 0.13 | 0.12 | ı | 14.50 | 10 | .18 | | 1 | | i i | | 1 | 25.0 |
| 22 | 7.00 | 33 | 0.93 | î | 0.14 | 0.14 | 1 | 15.20 | 10 | .12 | | Ĩ | | 1 1 | l S | 1. | 25.0 |
| 23 | 4.60 | | 1,13 | 100.0 | 0.13 | 0.14 | 1 | 15.00 | 10 | .16 | | 1 | | 1 1 | Ď. | L. | 24.5 |
| 24 | 5.30 | 100 | 100000000000000000000000000000000000000 | 1.77 | 0.11 | 0.12 | i | 18.80 | | | | 1 | | i i | | Ī | 24.5 |
| 25 | 10.00 | 155 | | -0.5 | 0.12 | 0.12 | - | 19.70 | | To the same of the | | 1 | | i i | 30 10 | 1 | 25.0 |
| 26 | 4.60 | 1123 | 0.51 | | 0.13 | 0.12 | | 20.80 | | | | 1 | | 1 1 | | 1 | 25.0 |
| 27 | 3.40 | 101 | Car Manage Land | | 0.12 | 0.13 | 100 | 19.30 | | | | Ĩ | | î i | | i | 25.5 |
| 28 | 3.30 | 1135 | | 100 | 0.13 | 0.14 | 356 | 19.70 | 0 | | | i | | i | | Ī | 25.5 |
| 29 | 4.70 | 82. | 0.89 | | 0.12 | 0.12 | | 19.40 | 100 | | | ì | | 1 | i | ì | 25.5 |
| 30 | | | | 0.50 | 0.13 | 0.14 | 150 | 20.00 | - | - NA | | 1 | | 1 | ir. | i | 25.0 |
| 31 | | | | | 0.12 | | | 20.40 | 100 | | | 1 | | 0.08 | ř | i | 24.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (AUG 1985)

| ATE I | TU | RBI | DITY | (F) | ru) | | 1 | OAGULANT | | | AID | 1 | Al (mo | | | pH | TEMP |
|-------|-------|-----|---|-----|---------|--------|-------|----------|---------------------|-----|-----|---|---------------|-------|----|-----|--------|
| ì | Raw | ľ | Set. | 13 | Filter | Treat. | I | mg/L | mg | /L' | | | | | | | |
| 1 | 3.90 | 1 | 0.89 | 1 | 0.13 | 0.14 | 1 | 19.80 | 0. | 16 | | j | | ı | | į. | 1 24. |
| 2 | 3.90 | | | | | 0.12 | 1 | 20.80 | 0. | 15 | | 1 | | 1 | | 1 | 1 23.5 |
| 3 | 3.30 | I | 1.00 | 1 | 0.13 | 0.13 | 1 | 19.20 | 0. | 10 | | 1 | | 1 3 | L | 1 | 23. |
| 4 | 1.70 | 1 | 0.89 | 1 | 0.13 | 0.14 | 1 | 19.20 | 0. | 13 | | 1 | | 1 1 | ļ. | 1 | 1 24.0 |
| 5 | 6.20 | - 1 | 0.70 | 1 | 0.15 | 0.15 | ſ | 20.00 | 0. | 14 | | 1 | | 1 | | 1 | 1 24.5 |
| 6 | 16.20 | 1 | 0.67 | 1 | 0.18 | 0.16 | 1 | 18.80 | 0. | 14 | | 1 | | 1 3 | | I. | 1 24. |
| 7 [| 6.50 | 1 | 0.87 | 1 | 0.18 | 0.19 | 1 | 19.60 | 0. | 13 | | 1 | | 1 1 | | 1 . | 24.5 |
| 8 | 4.50 | T. | 0.66 | 1 | 0.18 | 0.18 | 1 | 18.90 | 0. | 11 | | 1 | ä | 1 1 | | 1 | 1 24. |
| 9 | 4.20 | 1 | 0.80 | 1 | 0.20 | 0.19 | 1 | 19.90 | 0. | 13 | | 1 | | 1 4 | | 1 | 1 24.5 |
| 10 I | 2.60 | ï | 1.01 | ì | 0.19 | 0.22 | 1 | 20.80 | 0. | 17 | | Ţ | | 1 : | L | 1 | 1 24.5 |
| 11 | 3.90 | Ĺ | 0.98 | ĵ | 0.18 | 0.19 | 1 | 20.70 | 0. | 15 | | i | | 1 3 | | F | 24.5 |
| 12 I | 3.50 | | 1.18 | 1 | 0.19 | 0.19 | 1 | 18.90 | 0. | 15 | | 1 | | 1 3 | | 1 | 25. |
| 13 I | 2.80 | ì | 0.66 | 1 | 0.20 | 0.20 | 1 | 19.10 | 0. | 15 | | 1 | | 1 | | Ĭ. | 25. |
| 14 i | 3.10 | İ | | | 0.19 | | | 20.00 | 0. | 11 | | i | | ī | F | 1 | 1 25. |
| 15 I | 2.90 | 1 | 0.86 | 1 | 0.19 | 0.21 | 1 | 20.70 | 0. | 17 | | ı | | T I | | 1 | 25. |
| 16 1 | 5.30 | 1 | 0.99 | 1 | 0.20 | 0.20 | 1 | 21.30 | 0. | 21 | | 1 | | Ĭ I | Ĺ | 1 | 1 25. |
| 17 i | 3.70 | Ť | 1.00 | 1 | 0.19 | 0.19 | 1 | 20.90 | 0. | 15 | | 1 | | 0.11 | l. | 1 | 1 25. |
| 18 | 2,60 | i | 0.85 | i | 0.16 | 0.17 | 1 | 18.50 | 0. | 12 | | 1 | | 1 | Ĺ | 1 | 1 25. |
| 19 1 | 4.80 | | | | 0.15 | 0.14 | T | 20.40 | 0. | 14 | | 1 | | î î | Ì | Ĭ. | 1 24. |
| 20 | 5.10 | 200 | 0.88 | i | 0.14 | 0.14 | ì | 20.30 | 0. | 17 | | 1 | | · [] | | Ī | 1 24. |
| 21 | 4.40 | 100 | 0.66 | i | 0.14 | 0.14 | 1 | 19.40 | 0. | 11 | | 1 | | 1 | | 1 | 23. |
| 22 | 4.60 | | 200720000000000000000000000000000000000 | | 0.14 | 0.14 | 10.0 | 19,30 | | 1.0 | | 1 | | i i | | ì | 23. |
| 23 i | 4.50 | | | 100 | 0.14 | 0.15 | ì | 20.40 | 0. | 17 | | 1 | | 1 | ĺ | 1 | 1 23. |
| 24 | 5.10 | 765 | | 0.6 | 0.16 | 0.16 | | 20.70 | 0. | 14 | | 1 | | 1 | ĺ | Î | 1 23. |
| 25 | 4.60 | | | | 0.16 | 0.15 | 100 | 19.80 | 0. | 12 | | 1 | | ī | Ř | 1 | 23. |
| 26 1 | 4.60 | - | | | 0.15 | 0.16 | | 20.00 | | | | 1 | of the second | Î | | 1 | 1 23. |
| 27 | 6.20 | | 0.64 | 15 | | 0.16 | | 19.70 | 9 | | | 1 | | Ĩ | Į. | 1 | 1 23. |
| 28 [| 4.50 | | | | 0.15 | 0.14 | | 20.00 | | | | Ť | | Ĩ | ĺ | -1 | 23. |
| 29 1 | 4.00 | | | | 0.15 | | 1,000 | 19.80 | | | | i | | 0.10 | | ř | 23. |
| 30 1 | 5.10 | | | 100 | 7 | 0.14 | - 31 | 19.60 | | | | Î | | Î | | 1 | 23. |
| 31 | | | | 57 | 100 | 0.13 | 100 | 19.50 | S. In this contract | | | ŕ | | i | í | i | 1 23. |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (SEP 1985)

| DATE | TU | RB) | DITY | (F' | TU) | | 1 | COAGULANT | The state of the s | School Inc. | FILTER AID | | | | | рН | I I TEMP I DEG. C. |
|------|-------|-----|----------------|-------|---------|--|-----|---------------------|--|-------------|---------------|---|-----|--------|----------|----|--------------------------|
| 1 | Raw | 1 | Set. | 1 | Filter | Treat. | Ĭ | mg/L | mg/ | L (| mg/L | 1 | Raw | Treat. | Raw | | C. DAMESTON OF STREET |
| 1] | 3.00 | | 0.71 | I | 0.13 | 0.13 | ı | 18.40 | 0.1 | | | 1 | | 1 1 | 2-11-511 | 1 | 1 23.3 |
| 2] | 5.90 | 1 | 0.97 | 1 | 0.14 | 0.14 | 1 | 20.20 | 0.1 | 5 1 | | 1 | | j j | | 1 | 23.5 |
| 3 | 5.40 | 1 | 0.74 | 1 | 0.16 | 0.17 | 1 | 20.30 | 0.1 | 5 1 | | 1 | | ļ j | | 1 | 1 23.5 |
| 4 | 5.20 | 1 | 0.70 | - 1 | 0.16 | 0.15 | 1 | 19.40 | 0.1 |) (| | 1 | | j j | | 1 | 1 24.0 |
| 5 | 6.20 | 1 | 0.66 | 1 | 0.15 | 0.16 | 1 | 20.30 | 0.1 | 5 1 | | 1 | | 1 1 | | 1 | 1 24.5 |
| 6 | 6.20 | 1 | 0.66 | 1 | 0.16 | 0.16 | 1 | 20.10 | 0.1 | 5 [| | 1 | | 1 1 | | 1 | 1 24.5 |
| 7 | 5.00 | 1 | 0.50 | 1 | 0.15 | 0.16 | 1 | 20.10 | 0.1 | 3 | | 1 | | I I | | ī | 24.5 |
| 8 | 5.40 | 1 | 0.60 | 1 | 0.13 | 0.13 | Ì | 20.80 | 0.1 |) [| | 1 | | 1 1 | | 1 | 1 24.5 |
| 9 | 6.10 | 1 | 1.09 | - 1 | 0.17 | 0.16 | 1 | 19.00 | 0.1 | 3 1 | | 1 | | 1 3 | | 1 | 1 25.0 |
| 10 | 5.30 | 1 | 0.69 | 1 | 0.18 | 0.17 | 1 | 20.40 | 0.1 | 2 1 | | 1 | | 1 3 | | 1 | 1 25.0 |
| 11 | 5.10 | I | 1.17 | Ī | 0.14 | 0.14 | 1 | 20.30 | 0.1 | 5 | | 1 | | T 3 | | 1 | 1 25.0 |
| 12 | 4.00 | T | 1.15 | 1 | 0.13 | 0.14 | 1 | 20.20 | 0.1 | 7 1 | | 1 | | 1 3 | | 1 | 23.3 |
| 13 | 4.60 | 1 | 1.09 | 1 | 0.14 | 0.14 | 1 | 20.00 | 0.1 | 7 1 | | Ĭ | | i i | | 1 | 1 22.5 |
| 14 | 4.60 | ì | 1.14 | 1 | 0.14 | 0.14 | Ī | 19.70 | 0.1 | 2 | | 1 | | 0.08 | | 1 | 1 21.5 |
| 15 I | 3,20 | 1 | 1.28 | 1 | 0.13 | 0.14 | 1 | 19.60 | 0.2 | 2 1 | | 1 | | 1 1 | | 1 | 1 21.0 |
| 16 | 3.20 | ď | 1.11 | 1 | 0.14 | 0.15 | 1 | 20.30 | 0.1 | 1 | | 1 | | 1 4 | | ì | 1 21.0 |
| 17 | 3.10 | 1 | 0.89 | - 1 | 0.15 | 0.15 | ì | 20.30 | 0.1 | 5 1 | | 1 | | 1 4 | | 1 | 1 21.5 |
| 18 | 4.60 | 1 | 0.63 | i | 0.13 | 0.14 | 1 | 20.90 | 0.1 | 5 1 | | 1 | | 1 1 | | 1 | 1 21.5 |
| 19 | 4.90 | 1 | 0.55 | Î | 0.12 | 0.14 | 1 | 21.00 | 0.1 | 5 1 | | 1 | | i i | | ì | 1 21.8 |
| 20 I | 4.20 | 1 | 0.54 | | 0.33 | 0.13 | ì | 19.20 | 0.1 | 5 1 | | Î | | 1 1 | | 1 | 1 21.5 |
| 21 | 4.30 | 1 | 0.72 | î | 0.14 | 0.15 | 1 | 20.50 | 0.1 | 2 1 | | 1 | | 1 1 | | 1 | 1 21.5 |
| 22 | 3.90 | 1 | 0.52 | 1 | 0.14 | 0.14 | 1 | 21.00 | 0.1 | 7 1 | | 1 | | 1 1 | | 1 | 1 21.5 |
| 23 | 4.80 | 8 | | - 75 | 0.13 | 0.13 | İ | 18.30 | 0.1 | 3 1 | | * | | 1 1 | | ì | 1 22.0 |
| 24 | 18.30 | 1 | 1.04 | i | 0.12 | 0.12 | 1 | 21.50 | 0.1 | 2 1 | | 1 | | I I | | Ĩ. | 1 22.0 |
| 25 | 9.20 | - 2 | 0.88 | 1 | 0.12 | 0.13 | ĺ | 19.70 | 0.1 | 7 1 | | 1 | | 1 1 | | 1 | 1 20.8 |
| 26 1 | 20.50 | | | | 0.13 | 0.13 | | 23.00 | 0.1 | 3 1 | | ì | | i i | | I | 1 20.7 |
| 27 | 5.90 | 347 | | 351 | 0.13 | 0.13 | | 20.00 | | | | Ť | | Î Î | | 1 | 1 20.0 |
| 28 | 4.30 | | | | 0.11 | 0.12 | | 21.40 | | 100 | | 1 | | i i | | 1 | 1 19.5 |
| 29 | 4.80 | | 12010000101201 | | 0.11 | 0.10 | 1.7 | 18.50 | | | | Ī | | i I | | i | 1 19.5 |
| 30 | 5.70 | 280 | 0.84 | 101 | 0.11 | 0.11 | - 3 | 19.80 | | | | | | i i | | ì | 1 19.5 |
| 31 | | í | | | | MARKET POST OF THE PARTY OF THE | i | Water adoptions and | | -1 | | 1 | | a i | | r | I |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (OCT 1985)

| I I STAC | TUI | RB1 | DITY | (F) | | | 10 | OAGULANT | | | | FILTER AID | 100 | | g/L) | | рН | - D. V. | TEMP EG. C |
|-------------|--------------|------|------|------|--------|--------|-----|----------|---------|-----|----|---------------|-----|-----|--------|--------|----|---------|---------------|
| 1 | Raw | I | Set. | 1 3 | Filter | Treat. | 1 | mg/L | l m | g/L | l | mg/L | ı | Raw | | | | 200 | |
| 1 | 7.60 | | 0.90 | 1 | 0.12 | 0.12 | 1 | 19.30 | 10 | .13 | Ì | | ı | | 1 | l | 1 | l | 19.5 |
| 2 | 5.60 | 1 | 0.93 | 1 | 0.12 | 0.12 | 1 | 18,90 | 0 | .19 | 1 | | 1 | | Ĩ | 1 | t. | 1 | 19.0 |
| 3 | 5.50 | 1 | 1.09 | 1 | 0.12 | 0.12 | 1 | 20.50 | 0 | .14 | 1 | | 1 | | 1 | 1 | Ţ | 1 | 18.0 |
| 4 1 | | | | 1 | 0.10 | 0.11 | 1 | 20.70 | 0 | .12 | Ī | | 1 | | 1 | I, | ī | 1 | 18.0 |
| 5 [| 78.60 | 1 | 0.77 | 1 | 0.11 | 0.12 | 1 | 44.10 | 10 | .27 | I | | 1 | | 1 | 1 | Î | 1 | 16.0 |
| 6 I | 49.30 | 1 | 0.90 | 1 | 0.10 | 0.10 | 1 | 30.50 | 0 | .13 | l | | 1 | | 1 | T | T | 1 | 14.5 |
| 7 [| 36.50 | 1 | | | 0.10 | 0.10 | 1 | 25.50 | 0 | .18 | 1 | | 1 | | 1 | 1 | 1. | T | 14.5 |
| 8 1 | | | 0.89 | 1 | 0.09 | 0.09 | ĩ | 31.00 | 0 | .22 | ĺ | | Ī | | 1 | Ï | Ĩ | 1 | 14.5 |
| 9 1 | 27.70 | 1 | 0.86 | ı | 0.09 | 0.09 | 1 | 25.00 | 0 | .09 | Ī | | ı | | 1 | 1 | ī | 1 | 15.0 |
| 10 i | | 170 | | | 0.10 | 0.10 | | 22.20 | 0 | .17 | L | | i | | 1 | l . | Ĩ | ľ | 15.0 |
| 11 1 | | | | | 0.10 | 0.10 | | 20,60 | 0 | .16 | ĺ | | T | | ì | 1 | ĭ | 1 | 15.0 |
| 12 | 14.00 | | | | 0.10 | 0.10 | | 20.70 | | | î | | i | | Ĭ | Ĺ | Ĭ | 1 | 15.0 |
| 13 I | | | | 100 | 0.14 | 0.11 | | 21.00 | 10 | .16 | Ĭ | | 1 | | 1 0.07 | 1 | 1 | 1 | 15.5 |
| 14 | | 170 | | .20 | 0.12 | 0.13 | | 21.40 | | | î | | Ť | | 1 | Ī | î | ı | 15.5 |
| 15 [| | | | | 0.13 | 0.12 | 751 | 21.50 | 10 | .16 | Ī | | i | | ı | ı | Î | 1 | 15.5 |
| 16 | | -100 | | | 0.13 | 0.12 | | 17.40 | | | 1 | | Î | | I | 1 | 1 | 1 | 15.5 |
| 17 1 | | | | - | 0.13 | 0.12 | | 15.90 | | | Ē | | î | | Ĩ | ì | î | 1 | 15.0 |
| 18 | 10.80 | | | 100 | 0.14 | 0.13 | | 14.40 | 2 | | ì | | î | | ì | ì | ĺ | 1 | 15.0 |
| 19 | 8.60 | 188 | | | 0.18 | 0.17 | | 15.30 | | | i | | i | | ř | i | ì | i | 15.0 |
| 20 | 7.50 | | | 1121 | 0.15 | 0.14 | | 14.60 | | | i | | î | | ì | ì | ì | ī | 15.0 |
| 21 | 13.10 | | | | 0.13 | 0.16 | | 15.30 | 170 | | - | | i. | | 0.08 | î | ì | î | 14.7 |
| 22 | 8.90 | - | | | 0.12 | 0.13 | | 19.00 | - | | 15 | | ï | | í | ì | ì | i | 14.5 |
| 23 | 4.60 | | | 765 | 0.10 | 0.11 | | 25.20 | | | | | i | | i | î | î | ï | 14.5 |
| 24 | 5.50 | | | | 0.12 | 0.11 | | 20.30 | e | | | | î | | ì | ì | ì | î | 15.0 |
| 25 1 | 5.40 | (50 | | 0.50 | 0.12 | 0.11 | | 21.30 | | | | | i | | i | ì | î | i | 15.0 |
| 26 | 3.80 | | 1.39 | 10 | 0.11 | 0.12 | (3) | 19.40 | | | ď. | | i | | 0.07 | i | i | î | 15.0 |
| 27 | | | 1.29 | | 0.11 | 0.12 | | 22.00 | | | | | Ť | | 1 | î | î | i | 15.0 |
| 28 1 | 3.50 | | | | 0.12 | 0.12 | 12 | 21.50 | | | | | 1 | | í | i | ì | i | 14.5 |
| | | | 1.80 | 1171 | | 0.13 | 100 | 20.90 | 2 | | 1 | | i | | ì | i | î | i | 14.0 |
| 29 | | | 1.79 | | 0.09 | 0.11 | - | 20.60 | 1 | | 1 | | ì | | 1 | ı İ | i | i | 14.0 |
| 30 | 3.60 3.80 | | | 100 | 0.11 | | | 21.30 | (a 5000 | | 1 | | 24 | | 1 | 1 | 1 | 1 | 13.0 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (NOV 1985)

| DATE | TU | RB) | DITY | (F) | ru) | | 1 | OAGULANT | | OAG. AID | | | | METAL I | | | рН | i [[E | TEMP EG. C |
|------|-------|-------|-------------|-----|--------------------------|--------|-------|----------|-----|-----------------|---|------|---|---------|----------|-----|--------|------------|---------------|
| i. | Raw | 1 | Set. | 1 | Filter | Treat. | 1 | mg/L | ļπ | ng/L | ١ | mg/L | 1 | Raw | Treat. | Raw | Treat. | 7 | |
| 1 | 6.20 | I | 1.76 | ī | 0.08 | 0.09 | l | 21.80 | 10 | .09 | 1 | | 1 | | 1 . 1 | | Ī | ı | 13.0 |
| 2 | 7.80 | ī | 1.72 | 1 | 0.11 | 0.10 | ŀ | 20.20 | 10 | . 25 | l | | 1 | | 1 1 | | 1 | 1 | 13.0 |
| 3 1 | 6.00 | 1 | 1.48 | 1 | 0.13 | 0.11 | 1 | 22.40 | 10 | .15 | l | | 1 | | 1 1 | | 1 | 1 | 13.0 |
| 4 1 | 5.20 | 1 | 1.71 | 1 | 0.15 | 0.14 | 1 | 20.90 | 10 | .21 | 1 | | 1 | | 1 1 | | Ĭ | 1 | 13.0 |
| 5 | 3.90 | 1 | 1.68 | 1 | 0.14 | 0.14 | 1 | 19.60 | 10 | .20 | 1 | | ł | | 1 1 | | I | 1 | 12.5 |
| 6 1 | 3.70 | 1 | 1.56 | 1 | 0.16 | 0.15 | ì | 20.70 | 1 0 | .10 | 1 | | l | | 1 1 | | ı | I | 12.0 |
| 7 1 | 8.70 | 1 | 1.42 | 1 | 0.14 | 0.15 | 1 | 20.50 | 1 0 | .10 | i | | 1 | | 1 1 | | 1 | 1 | 12.0 |
| 8 1 | 10.40 | 1 | 1.74 | 1 | 0.17 | 0.15 | 1 | 21.20 | 10 | .17 | 1 | | 1 | | 1 1 | | 1 | 1 | 11.0 |
| 9 1 | 6.40 | 1 | 1.23 | 1 | 0.13 | 0.16 | 1 | 20.30 | 10 | .15 | 1 | | ł | | 1 0.09 1 | | 1 | 1 | 11.0 |
| 10 | 6.30 | Ī | 1.10 | 1 | 0.13 | 0.13 | J | 21.00 | 10 | .18 | 1 | | l | | 1 1 | | l | 1 | 11.0 |
| 11 1 | 5.40 | ı | 1.17 | 1 | 0.13 | 0.14 | 1 | 23.80 | 10 | .16 | ı | | 1 | | T I | | ľ | 1 | 10.0 |
| 12 1 | 6.70 | i | 0.84 | | 0.13 | 0.16 | 1 | 17.20 | 10 | .23 | ı | | 1 | | 1 1 | | 1 | Ĺ | 9.5 |
| 13 | 4.80 | 1 | 0.77 | 1 | 0.13 | 0.15 | 1 | 19.20 | 10 | .10 | 1 | | 1 | | 1 1 | | 1 | 1 | 9.5 |
| 14 1 | 3.90 | 10 | 0.76 | 1 | 0.13 | 0.14 | 1 | 20.10 | 1 0 | .18 | I | | 1 | | 1 1 | | 1 | 1 | 9.5 |
| 15 I | 3.10 | ì | 0.75 | 1 | 0.12 | 0.13 | 1 | 19.50 | 10 | .10 | 1 | | 1 | | 1 | | 1 | t | 9.0 |
| 16 1 | 6.60 | 1 | 0.92 | 1 | 0.14 | 0.14 | | 17.90 | 10 | .26 | 1 | | ł | | 1 1 | | 1 | 1 | 9.0 |
| 17 1 | 20.50 | ì | 0.78 | î | 0.18 | 0.16 | 1 | 19.70 | 10 | .15 | 1 | | 1 | | 1 1 | | 1 | 1 | 8.5 |
| 18 1 | 16.30 | Ť | 0.90 | 1 | 0.19 | 0.19 | 1 | 17.10 | 10 | .10 | 1 | | 1 | | 1 1 | | 1 | 1 | 8.2 |
| 19 1 | 29.50 | 1 | 1.07 | 1 | 0.19 | 0.21 | 1 | 19.90 | 10 | .18 | l | | 1 | | 1 1 | | ï | 1 | 9.0 |
| 20 1 | 43.90 | i | 1.28 | 1 | 0.15 | 0.17 | 1 | 27.00 | 10 | .23 | 1 | | 1 | | 7 1 | | I | 1 | 9.2 |
| 21 1 | 26.80 | i | 1.05 | 1 | 0.15 | 0.16 | ï | 25.30 | 10 | .18 | 1 | | 1 | | 1 1 | | £ | 1 | 8.5 |
| 22 1 | 23.40 | 1 | 1.00 | | 0.15 | 0.15 | 1 | 21.20 | 10 | .20 | ı | | ŀ | | I I | | ı | 1 | 8.0 |
| 23 1 | 23.30 | 140 | 0.85 | 1 | 0.16 | 0.17 | 1 | 21.30 | 10 | . 25 | ı | | 1 | | 3 1 | | ı | 1 | 7.3 |
| 24 | 17.00 | i | 1.02 | 1 | 0.16 | 0.17 | 1 | 17.60 | 1 0 | .13 | ı | | 1 | | 1 1 | | 1 | 1 | 7.3 |
| 25 | 12.30 | | 1.06 | | | 0.16 | 1 | 17.50 | 10 | .11 | ١ | | ŀ | | i i | | l | 1 | 6.5 |
| 26 | 9.60 | | 0.82 | 1 | 0.16 | 0.18 | 1 | 15.20 | 10 | .10 | 1 | | 1 | | 1 1 | | 1 | 1 | 6.5 |
| 27 1 | 11.50 | | 0.97 | 12 | 0.18 | 0.21 | 1 | 15.30 | 10 | .18 | 1 | | 1 | | 1 1 | | 1 | 1 | 6.5 |
| 28 1 | 12.70 | _ | 0.99 | | 1 4 Maria Control (1971) | 0.21 | 14.50 | 15.80 | | and the same of | 1 | | 1 | | 1 1 | | 1 | 1 | 6.5 |
| 29 1 | 15.30 | | 0.85 | | 0.20 | 0.20 | 1.5% | 17.10 | 10 | .16 | 1 | | 1 | | 1 1 | | ł | 1 | 6.0 |
| 30 1 | 13.70 | 1.0 | 0.67 | 132 | 0.21 | 0.20 | 1 | 16.20 | 10 | .14 | ı | | Î | | 1 1 | | 1 | 1 | 6.0 |
| 31 | | Ť. | -31/5/10/07 | i. | i | | 1 | | Ĺ | | 1 | | Y | | f I | | 1 | r | |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (DEC 1985)

| I DATE I | | TU1 | RB1 | DITY | (F) | ro) | | 1 | COAGULANT | | COAG. AID | | | | RES. mg/L) | 1 | | рН | | |
|-------------|--------|-------|------|------|------|---------|--------|-----|-----------|------|--|------|-----|-----|---------------|---|-----|--------|-------|-----|
| 1 | | Raw | 4 | Set. | 1 | Filter | Treat. | į | mg/L | 1 | mg/L: | mg/L | 1 | Raw | Treat. | . | Raw | Treat. | İ | |
| 1 (| | 19.40 | ĺ | 1.56 | 1 | 0.18 | 0.18 | 1 | 20.50 | ١ | 0.22 | | 1 | | 1 | 1 | | 1 | 1 | 6.0 |
| 2 | | 99.30 | 1 | 3.05 | 4 | 0.16 | 0.19 | 1 | 45.70 | 1 | 0.33 | | 1 | | 1 | 1 | | Į. | I | 4.5 |
| 3 1 | | 88.80 | 1 | 0.76 | 1 | 0.12 | 0.14 | i | 44.30 | 1 | 0.33 | | 1 | | 1 | 1 | | 1 | Į | 3.3 |
| 4 1 | 8 | 71.40 | 1 | 0.87 | 1 | 0.12 | 0.15 | i | 37.40 | 1 | 0.23 | | 1 | | 1. | 1 | | 1 | 1 | 3.2 |
| 5 | | 56.30 | 1 | 1.01 | 1 | 0.14 | 0.16 | 1 | 31.90 | 1 | 0.28 | | 1 | | 1 | I | | 1 | I | 3.0 |
| 6 1 | | 42.00 | Ŧ | 0.75 | 1 | 0.11 | 0.14 | 1 | 30.70 | 1 | 0.13 | | - 1 | | 1 | 1 | | 1 | ı | 3.0 |
| 7 1 | | 55.50 | 1 | 1.27 | 1 | 0.14 | 0.16 | 1 | 30.30 | 1 | 0.28 | | E | | 1 | 1 | | l . | 1 | 2.8 |
| 8 1 | | 72.40 | 1 | 0.86 | 1 | 0.14 | 0.17 | 1 | 48.10 | 1 | 0.38 | | 1 | | 1 | 1 | | 1 | 1 | 2.5 |
| 9 | | 41.10 | 1 | 1.21 | 1 | 0.15 | 0.17 | 1 | 31.90 | 1 | 0.10 | | 1 | | 1 | 1 | | 1 | ľ | 2.5 |
| 10 | | 35.80 | 1 | 1.21 | 1 | 0.16 | 0.18 | 1 | 27.60 | 1 | 0.21 | | -1 | | l . | Ī | | 1 | 1 | 2.5 |
| 11 | | 31.70 | 1 | 1.10 | 1 | 0.15 | 0.20 | 1 | 26.80 | 1 | 0.23 | | 1 | | ı | 1 | | 1 | 1 | 2.5 |
| 12 | | | | | | 0.19 | 0.22 | 1 | 24.60 | 1 | 0.27 | | 1 | | 1 | 1 | | 1 | 1 | 2.5 |
| 13 1 | | | | | | 0.18 | 0.20 | 1 | 21.40 | ī | 0.11 | | 1 | | Ĭ. | 1 | | i | 1 | 2.5 |
| 14 1 | | 51.40 | | | 100 | 0.21 | 0.23 | 1 | 25.30 | 1 | 0.28 | | 1 | | 1 | 1 | | 1 | 1 | 2.0 |
| 15 I | Ď | 86.20 | 1 | 4.60 | î | 0.21 | 0.26 | 1 | 48.50 | 1 | 0.27 | | 1 | | T: | 1 | | T | 1 | 1.0 |
| 16 1 | | 67.60 | | | | 0.23 | 0.30 | 1 | 49.80 | 1 | 0.34 | | 1 | | L | 1 | | 1 | 1 | 0.5 |
| 17 I | y D | 48.30 | i | 2.40 | i | 0.21 | 0.21 | Ĺ | 30.00 | 1 | 0.27 | | 1 | | l. | 1 | | 1 | 1 | 0.5 |
| 18 I | | 38.00 | 20 | | | 0.20 | 0.20 | 1 | 27.70 | 1 | 0.14 | | 1 | | Ť | T | | 1 | 1 | 0.5 |
| 19 I | | 33.80 | 1 | 1.90 | i | 0.21 | 0.24 | 1 | 23.70 | 1 | 0.27 | | 1 | | 1 | 1 | | 1 | 1 | 0.5 |
| 20 I | | 30.80 | | | | 0.23 | 0.23 | 1 | 22.40 | 1 | 0.14 | | ĺ | | ı | 1 | | Ť | 1 | 0.5 |
| 21 | e E | | | | | 0.24 | 0.26 | 1 | 20.00 | i | 0.27 | | - 1 | | ı | 1 | | 1 | 1 | 0.5 |
| 22 | | 26.70 | - 65 | | 135 | 0.20 | 0.29 | | 20.40 | ı | 0.14 | | Ī | | 1 | 1 | | 1 | 1 | 0.5 |
| 23 1 | | 23.30 | | | | 0.23 | 0.24 | | 19.50 | | | | 1 | | i | l | | Ť | Î | 0.5 |
| 24 1 | 9. | 18.00 | | | | 0.18 | 0.25 | 1 | 20.10 | ì | 0.14 | | Î | | i | 1 | | I | 1 | 0.5 |
| 25 1 | | 16.30 | 350 | | | 0.20 | 0.25 | | 20.50 | | - Contract (0) | | 1 | | 1 | 1 | | Ĭ | 1 | 0.5 |
| 26 1 | | 15.00 | - | | - | 0.19 | 0.25 | | 20.50 | 100 | A STATE OF THE STA | | i | | Î | 1 | | 1 | Ĭ | 0.5 |
| 27 1 | | | 1.00 | | | 0.15 | 0.23 | | 20.60 | 65.5 | 11101111 127 | | 1 | | î | T | | ľ | ĺ | 0.5 |
| 28 1 | | 777 | - 6 | | 117 | 0.17 | 0.20 | . 4 | 20.70 | 100 | | | 1 | | 1 | i | | 1 | F | 0.5 |
| 29 1 | | | | | | 0.15 | 0.18 | 100 | 20.50 | (2. | | | 1 | | T. | 1 | | I. | Ī | 0.5 |
| 30 1 | | | 200 | | 1.00 | 0.17 | 0.20 | - | 16.60 | | | | i | | Î | ì | | Ì | 1 | 0.5 |
| 31 | | | | | | | 0.21 | 100 | 15.30 | | THE PARTY S | | i | | Î | i | | i | ľ | 0.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JAN 1986)

| ATE | TUF | BID | ITY | (FT | (טי | | 1 | COAGULANT | | AG. LID | | | METAL I | | | рН | I TE | |
|------|------|---------|------|-----|--------|--------|-----|-----------------|----------|--------------|------|---|---------|--------|------|----|------|----|
| 1 | Raw | S | et. | į £ | ilter | Treat. | 1 | mg/L |) m | g/L | mg/L | Ī | Raw | Treat. | Raw | | | |
| 1 | 5.70 | 1 | .30 | ı | 0.12 | 0.13 | 1 | 14.80 | 10. | 15 | | 1 | | 1 | ı | 1 | Ī | |
| 2 1 | 6.30 | 1 | .90 | 1 | 0.13 | 0.12 | 1 | 15.60 | 10. | 15 | | 1 | | Ī. | 1 | 1 | 1 | |
| 3 | 5.50 | 1 1 | .70 | 1 | 0.16 | 0.15 | 1 | 13.90 | 10. | 14 | | 1 | | T . | I | 1 | 1 | |
| 4 | 4.70 | 1 1 | .50 | Į. | 0.10 | 0.11 | 1 | 15.10 | 10. | 15 I | | 1 | | | 1 | 1 | 1 | |
| 5 1 | 4.60 | 1 1 | . 60 | 1 | 0.13 | 0.14 | 1 | 14.70 | 10. | 16 | | 1 | | i . | Í | ı | 1 | |
| 6 1 | 4.50 | 1 1 | . 90 | Ì | 0.11 | 0.10 | 1 | 14.60 | 10. | 13 | | Ţ | | 1 | I | ī | ı | |
| 7 (| 4.20 | 1 2 | 2.30 | Ĺ | 0.07 | 0.08 | 1 | 16.40 | 10. | 16 | | l | | 1 | 1 | 1 | i | |
| 8 | 4.30 | 1 2 | 2.30 | 1 | 0.06 | 0.07 | 1 | 15.00 | 10. | 15 | | 1 | | 1 | 1 | 1 | Ī | |
| 9 1 | 4.00 | 1 3 | .80 | ł | 0.09 | 0.10 | 1 * | 5.14 | 10. | 14 | | 1 | | I | 1 | 1 | 1 | |
| 10 I | 3.60 | 1 2 | .30 | 1 | 0.09 | 0.10 | 1 * | 5.31 | 10. | .13 [| | 1 | | 1 | J | 1 | I | |
| 11 i | 3.60 | 1 1 | .70 | ì | 0.07 1 | 0.08 | * | 5.01 | 10. | .12 | | 1 | | Î | ĺ | ı | 1 | |
| 12 | 3.10 | 1 1 | .40 | ì | 0.18 | 0.17 | 1 * | 6.05 | 10. | 10 | | 1 | | 1 | 1 | l | i | |
| 13 I | 3.10 | 7 | .20 | i | 0.18 | 0.19 | . * | 4.41 | 10. | 10 | | 1 | | 1 | 1 | ł | 1 | |
| 14 1 | 3.40 | | .10 | 1 | 0.16 | 0.15 | * | 4.09 | 10. | .11 | | ŀ | | Ï | 1 | 1 | Ĭ. | |
| 15 I | 3,20 | | .86 | ĺ | 0.18 | 0.17 | 1 * | 4.07 | 10. | 11 | | ı | | Î | 1 | 1 | 1 | |
| 16 i | 3.10 | 1 | .20 | 2 | 0.16 | 0.15 | * | 4.32 | 10. | .10 | | 1 | | T . | I | ł | 1 | |
| 17 I | 3.00 | | .20 | 1.5 | 0.14 | 0.15 | 1 * | 4.97 | 10. | 10 | | 1 | | Ĭ | ĺ | 1 | į. | |
| 18 1 | 3.00 | | .94 | | 0.14 | 0.15 | 100 | | 10. | .11 | | 1 | | Í | Ī | 1 | i. | |
| 19 I | 3.40 | | .00 | -10 | 0.11 | 0.12 | 150 | | 10. | 12 | | Ĺ | | 1 | 1 | 1 | 1 | |
| 20 | 4.30 | - | .10 | - | 0.12 | 0,13 | | | 100 000 | | | i | | i | 1 | Î | 1 | |
| 21 | 5.20 | | .00 | Ê | 0.14 | 0.13 | 200 | | | 100 | | Î | | 1 0.07 | i | ı | ì | |
| 22 | 6.10 | 120 (1) | .30 | i | 0.15 | 0.14 | 0 | | - 5 | - Company 33 | | Í | | 1 | Ī | Ī | 1 0 | ο. |
| 23 | 4.30 | 6 | .10 | ï | 0.18 | 0.17 | | 4.00.04.0.000.0 | | scholars is | | î | | 1 | 1 | 1 | 1 (| 0. |
| 24 | 3.80 | | .10 | i | 0.12 | 0.11 | | | 10. | 10 | | ĺ | | ì | ĺ | i | 1 (| ο. |
| 25 | 4.70 | 100 | .10 | i | 0.13 | 0.14 | | | | | | i | | 1 | I . | i. | 1 0 | 0. |
| 26 | 3.60 | 3 | .10 | i | 0.16 | 0.15 | | | | | | i | | ī | 1 | T. | 0.51 | ٥. |
| 27 | 3.80 | | .40 | i | 0.16 | 0.15 | 540 | 11.050-050-05 | | | | î | | i | Ī | Í | 1 0 | 0. |
| 28 | 3.50 | | .30 | ì | 0.14 | 0.15 | | | The same | Und View Of | | ì | | ì | ı | ì | | 0. |
| 29 | 3.30 | - R (3) | .20 | í | 0.16 | 0.17 | | | | | | i | | i | t | Ĭ. | | ο. |
| 30 | 3.10 | | .10 | í | 0.17 | 0.16 | | | | | | i | | 0.08 | ľ | İ | 18 | ο. |
| 31 | 3.10 | - 1 | .20 | 1 | 0.17 | 0.16 | -97 | | 180 20 | | | | | 1 | Ť | i. | | ο. |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.1: PARTICULATE REMOVAL PROFILE (FEB 1986)

| I ATE | TU | RB] | DITY | (F1 | נט) | | | 1 | | | I A | D I | AID | 1 | 24-1-100-100-100-100-100-100-100-100-100- | g/L) | | рН | TE | |
|--|------|------|------------|-----|--------|-----|--------|-----|-----|-----|----------|------------|-----|-----|---|-------|-----|--------|------|-----|
| į. | Raw | 1 | Set. | 1.3 | Filter | 1 | Treat. | | | | | | | | | | | Treat. | | |
| 1 | 2.80 | | 0.97 | 1 | 0.12 | 1 | 0.14 | 1 | * 4 | .57 | 10. | 10 | | 1 | | 1 | 1 | 1 | 100 | 0.5 |
| 2 | 2.70 | 1 | 1.00 | 1 | 0.14 | 1 | 0.15 | I | * 4 | .73 | 10. | 10 | | -1 | | I | 1 | 1 | 1 (| 0.5 |
| 3 [| 2.70 | 1 | 1.00 | 1 | 0.14 | 1 | 0.12 | | | .15 | 10. | 10 | | 1 | | 1 | 1 | 1 | 1 0 | 0. |
| 4 | 2.70 | 1 | 1.00 | 1 | 0.10 | ĺ | 0.11 | Ī | * 4 | .64 | 10. | 10 | | 1 | | 1 | 1 | 1 | 100 | 0. |
| 5 1 | 2.80 | 1 | 0.98 | 1 | 0.11 | 1 | 0.14 | 1 | * 4 | .66 | 10. | 10 | | 1 | | 1 0.0 | 5 | 1 | 1 (| 0. |
| 6 1 | 2.90 | - | 1.10 | | 0.13 | Ť. | 0.15 | 1 | * 5 | .28 | 10. | 10 | | 1 | | 1 | 1 | 1 | 1 0 | 0. |
| 7 i | - | | 0.79 | i | 0.08 | i | 0.10 | Ī | * 4 | .70 | 10. | 10 | | 1 | | ì | 1 | 1 | 1 (| 0. |
| 8 I | 1.40 | | 0.66 | | 0.08 | Ī | 0.08 | Ī | * 4 | .69 | 10. | 10 | | 1 | | 1 | 1 | 1 | 1 0 | 0. |
| 9 1 | 1.60 | - 3 | 0.64 | | 0.09 | | 0.10 | ī | * 4 | .73 | 10. | 10 | | ı | | 1 0.0 | 2 | 1 | 1 (| 0. |
| 10 1 | 1.50 | | 0.63 | | 0.08 | 100 | 0.09 | Î | * 5 | .02 | 10. | 10 | | l | | 1 | 1 | 1 | 1 0 | 0. |
| 11 | 1.40 | - 3 | 0.63 | 150 | 0.07 | | 0.09 | 1 | * 5 | .01 | 10. | 10 | | 1 | | 1 | 1 | 1 | 1 0 | 0. |
| 12 | 1.20 | | 0.63 | 100 | 0.10 | - | 0.09 | 1 | * 5 | .10 | 10. | 10 | | ı | | Ĭ | 1 | Ī | 1 0 | 0. |
| 13 1 | 1.20 | | 0.81 | ~ | 0.08 | | 0.09 | 15 | | .04 | 10. | 10 | | ľ | | 1 | i | ı | 1 (| 0. |
| 14 1 | 1.30 | - | 0.53 | | 0.08 | | 0.07 | | | .81 | 10. | 10 | | Ĭ. | | Ī | 1 | 1 | 1 0 | 0. |
| 15 | 1.50 | 1.5 | 0.60 | 15 | 0.07 | | 0.09 | | | .00 | 10. | 10 i | | 1 | | 1 | î | 1 | 1 0 | 0. |
| 16 | 1.70 | | 0.61 | | 0.09 | | 0.09 | 200 | | .03 | - 15 les | | | - î | | Î | 1 | ı | 1 (| 0. |
| 17 I | 2.00 | | 0.85 | 2.5 | 0.10 | 55 | 0.09 | 05 | | .04 | | ALL TO 100 | | i | | í | ī | 1 | 1 0 | 0. |
| 18 | 2.10 | 100 | 0.87 | | 0.10 | 500 | 0.09 | | | .90 | | | | 1 | | ì | 1 | i | 1 (| 0. |
| 19 | 2.00 | | 0.75 | | | ~ | 0.10 | 5.0 | | .28 | | | | Ť | | 0.0 | 8 1 | 1 | 1 0 | 0. |
| 20 1 | 2.00 | | 0.64 | 100 | 0.09 | | 0.10 | | | .89 | - III | | | Ť | | i | 1 | i | 1 0 | ο. |
| 21 | 4.80 | | 0.85 | 19 | 0.12 | 130 | 0.11 | | | .01 | 1 | | | - i | | i | i | î | 1 0 | 0. |
| 22 | 2.60 | | 0.74 | | 0.10 | | 0.12 | | | .02 | 190 | | | - î | | i | i | î | 1 (| ο. |
| 23 | 2.40 | | 0.79 | | 0.10 | 13 | 0.12 | 7. | | .00 | 25 (11) | | | î. | | ì | i | ì | 1 (| ο. |
| 24 | 2.90 | | 1.10 | - 5 | 0.11 | | 0.13 | 06. | | .86 | | 300 | | 4 | | i | Ť | i | (*) | ο. |
| 24 I | 2.70 | | 0.89 | - 7 | 0.10 | 3 | 0.10 | 100 | | .35 | | | | i | | ř | Ī | 1 | | 0. |
| 25 I | 2.60 | | | | 0.10 | | 0.12 | 7 | | .81 | | photos in | | i | | î | | í | | 0: |
| 27 | 2.50 | | Section 15 | | 0.09 | | 0.10 | 3.0 | | .28 | | | | i | | 1 0.0 | 9 1 | i | | ο. |
| 28 1 | 2.60 | - | 0.86 | | 0.11 | | 0.12 | 16 | | .04 | | | | 1 | | 1 | 1 | ï | -17. | 0. |
| 28 I | 2.00 | 1 | 0.00 | - | V.11 | 1 | 0.12 | 4 | | | 1 | 1 | | 1 | | f | 1 | î | | 0. |
| The State of the S | | - Io | | 1 | | 1 | | 1 | | | 1 | - 4 | | 1 | | ģ. | 1 | i | | 0. |
| 30 31 | | 1 | | 1 | | | | 1 | | | ı. | | | 1 | | | 118 | 1 | | 0. |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.1: PARTICULATE REMOVAL PROFILE (MAR 1986)

| DATE | TU | RB) | DITY | (F) | ru) | | 1 | COAGULANT | All contracts | 31 | FILTER AID | 270 | METAL F | | 1 | | рН | I TEM DEG. | |
|------|-------|------|------|-------|--------|--------|------|---------------|---------------|-----|---------------|-----|---------|--------|----|-----|----|----------------------|-----|
| i | Raw | 1 | Set. | 1. | Filter | Treat. | 1 | mg/L | mg/I | . 1 | mg/L | 1 | Raw | Treat. | 1 | Raw | | 1 | |
| 1 / | 2.90 | 1 | 0.78 | 1 | 0.10 | 0.10 | Ī | * 5.05 | 10.08 | 1 | | ı | | 1 0.08 | 1 | | 1 | - E | . 5 |
| 2 | 2.70 | 1 | 0.77 | ı | 0.09 | 0.09 | 1 | * 4.70 | 10.07 | -1 | | 1 | | 1 | ı | | 1 | 1 0 | . 5 |
| 3 | 2.60 | 1 | 0.91 | 1 | 0.08 | 0.09 | 1 | * 5.26 | 10.11 | -1 | | 1 | | 1 | ı | | 1 | 1 0 | . : |
| 4 | 3.00 | 1 | 0.82 | 1 | 0.09 | 0.09 | 1 | * 5.01 | 10.06 | i | | 1 | | 1 | 1 | | 1 | 1 0 | . 5 |
| 5 1 | 2.00 | 1 | 0.75 | 1 | 0.10 | 0.10 | 1 | * 5.15 | 0.11 | 1 | | 1 | | 1 | 1 | | l |) 0 | |
| 6 | 1.90 | 1 | 0.87 | 1 | 0.09 | 0.09 | 1 | * 5.14 | 1 0.05 | - 1 | | 1 | | 1 | 1 | | Į. | 1 0 | |
| 7] | 1.70 | 1 | 0.68 | t | 0.09 | 0.09 | 1 | * 4.64 | 10.12 | -1 | | 1 | | 4 | 1 | | 1 | 1 0 | . ! |
| 8 | 1.60 | 1 | 0.63 | 1 | 0.10 | 0.10 | 1 | * 5.02 | 10.07 | 1 | | 1 | | 1 | 1 | | 1 | 1 0 | . ! |
| 9 1 | 1.50 | 1 | 0.61 | 1 | 0.10 | 0.10 | 1 | * 5.02 | 10.07 | 1 | | 1 | | 1 | 1 | | ı | 1 0 | |
| 10 (| 1.50 | 1 | 0.72 | 1 | 0.10 | 0.10 | 1 | * 4.67 | 10.08 | 1 | | 1 | | ji | 1 | | 1 | 1 0 | • |
| 11 i | 10.10 | î | 1.00 | 1 | 0.11 | 0.10 | 1 | * 5.00 | 10.07 | T | | 1 | | 1 | 1 | | ł | 1 0 | • |
| 12 | 3.20 | | 0.82 | Ĩ | 0.12 | 0,13 | 1 | * 5.07 | 10.08 | 1 | | ł | | 1 | Ĭ | | ĺ | 0 | |
| 13 I | 1.50 | ì | 0.80 | 1 | 0.10 | 0.11 | Ì | * 5.61 | 1 0.08 | -1 | | 1 | | I | 1 | | ı | 1 0 | |
| 14 | 2.00 | Î | 0.66 | 1 | 0.10 | 0.10 | 1 | * 4.79 | 0.08 | - 1 | | 1 | | 1 | 1 | | 1 | 0 | |
| 15 i | 2.20 | | 0.60 | 1 | 0.10 | 0.11 | 1 | * 5.37 | 10.07 | 1 | | 1 | | 1 | 1 | | Í | 1 0 | |
| 16 | 2.50 | 1,22 | 0.70 | 1 | 0.09 | 0.09 | Î | * 5.00 | 10.07 | 1 | | ł | | 1 | 1 | | 1 |) 0 | |
| 17 i | 1.70 | 127 | 0.70 | 1 | 0.09 | 0.08 | 1 | * 4.99 | 0.11 | 1 | | 1 | | 1 | I | | 1 | 1 0 | |
| 18 I | 1.70 | Ĩ | 0.81 | 1 | 0.09 | 0.12 | T | * 5.08 | 0.10 | 1 | | 1 | | 1 | 1 | | Ĩ | 1 0 | |
| 19 i | 2.30 | Ĩ | 1.20 | 1 | 0.10 | 0.10 | Ī | * 5.03 | 0.07 | 1 | | 1 | | 1 | 1 | | Ĭ | 1 0 | |
| 20 i | 3.20 | | 1.00 | 1 | 0.09 | 0.11 | 1 | * 5.17 | 10.10 | 1 | | 1 | | Ť | 1 | | 1 | 1 0 | |
| 21 | 4.00 | Ì | 1.30 | î | 0.09 | 0.09 | 1 | * 5.29 | 0.10 | 1 | | 1 | | 1 | I | | Ī | 1 0 | |
| 22 | 2.40 | 1 | 0.97 | 1 | 0.08 | 0.08 | 1 | * 5.60 | 10.08 | 1 | | 1 | | Ī | 1 | | Ì | 0 | |
| 23 | 6.40 | Ť | 1,30 | î. | 0.11 | 0.09 | Ì | * 5.05 | 10.07 | 1 | | 1 | | 1 | 1 | | 1 | 1 0 | |
| 24 | 6.10 | 1 | 1.70 | (50.0 | 0.13 | 0.12 | 1 | * 5.18 | 10.06 | 1 | | 1 | | 1 | 1 | | 1 | 1 0 | |
| 25 1 | 5.10 | Ì | | | 0.10 | 0.11 | | | 10.09 | | | I | | i | 1 | | Î | 1 0 | |
| 26 | 8.50 | Ĩ | 2.50 | I | 0.11 | 0.11 | i | * 5.59 | 10.10 | 1 | | 1 | | 1 | 1 | | i | 1 0 | |
| 27 | 11.50 | 32 | 1.60 | 100 | 0.08 | 0.11 | | | 10.08 | | | I | | 1 0.04 | 1 | | 1 | 1 0 | |
| 28 | 9.20 | | | 1.75 | 0.09 | 0.12 | 35 | | 10.07 | 124 | | 1 | | 1 | 1 | | i | 1 | |
| 29 1 | 18.40 | -0.5 | | 190 | 0.11 | 0.11 | | | 10.07 | | | 1 | | 1 0.07 | 1 | | Ì | 1 | |
| 30 i | 5.10 | . 3 | 1.90 | - | 100 | 0,10 | | | 10.07 | | | 1 | | 1 | t | | Ì | 1 1 | . 1 |
| 31 1 | 4.60 | | 1.60 | (2) | | 0.09 | - 15 | | 10.11 | | | 1 | | 1 | 10 | | i | j 1 | |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.1: PARTICULATE REMOVAL PROFILE (APR 1986)

| 1 7 2 6 3 5 4 6 5 4 6 6 7 9 8 12 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .60 .50 .80 .10 .80 .10 .50 .50 | 1.90 1.70 1.60 2.00 1.60 1.90 2.80 3.50 3.10 | 0 0 0 2 3 3 4 | 0.11 0.08 0.07 0.06 0.06 0.08 0.09 | L I I | 0.10 0.09 0.08 0.08 0.08 | 1 | * 5.20 |] | 0.10 0.09 | 1 | mg/L | 1 1 | | Treat. | |
|---|--|--|---|--|-----------------|--------------------------------------|------|------------------|------------|-----------------|-------|------|--------|------|--------|-------|
| 2 6 3 5 4 6 5 4 6 6 7 9 8 12 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .50 .80 .10 .80 .10 .50 .40 | 1.70 1.60 2.00 1.60 1.90 2.80 3.50 3.50 | 0 0 2 3 3 3 | 0.08 0.07 0.06 0.06 0.08 0.09 | I. I. I. | 0.09 0.08 0.08 0.08 | 1 | * 5.20 * 5.20 | 1 | 0.09 | | | 1 | I I | ĺ | |
| 2 6 3 5 4 6 5 4 6 6 7 9 8 12 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .50 .80 .10 .80 .10 .50 .40 | 1.70 1.60 2.00 1.60 1.90 2.80 3.50 3.50 | 0 0 2 3 3 3 | 0.08 0.07 0.06 0.06 0.08 0.09 | I. I. I. | 0.09 0.08 0.08 0.08 | Ì | * 5.20 | Î | | 1 | | Ĩ | 1 1 | Ĭ. | 1 1. |
| 3 5 4 6 5 4 6 6 7 9 8 12 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .80 .10 .80 .80 .10 .50 .40 | 1.60 2.00 1.60 1.90 2.80 3.50 3.10 |) 2 3 3 3 1 | 0.07 0.06 0.06 0.08 0.09 | 1 | 0.08 0.08 | 1 | | | 0.09 | | | | | | |
| 4 6 6 7 9 8 12 9 10 11 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .10 .80 .80 .10 .50 .40 .00 | 2.03 1.64 1.94 2.84 3.54 3.14 | 2 3 3 3 4 | 0.06 0.06 0.08 0.09 | l I | 0.08 | | | | | 1 | | 1 | 1 1 | 1 | 1 1. |
| 5 4 6 6 7 9 8 12 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .80 .80 .10 .50 .40 | 1.6 1.9 2.8 3.5 3.1 | 3 3 3 1 | 0.06 0.08 0.09 | Ţ | | i. | | 1 | | | | 1 | 1 1 | I | 1 2. |
| 6 6 7 9 8 12 9 10 10 7 11 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .80 .10 .50 .40 .00 | 1.9 2.8 3.5 3.1 | 3 3 1 | 0.08 | | - 15-C-15-C-18- | | 20.80 | T | 0.06 | T | | 1 | 1 3 | Ī | 1 2. |
| 7 9 8 12 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .10 .50 .40 .00 | 2.8 3.5 3.1 | 3 1 | 0.09 | • | 0.09 | 1 | 24.00 | Ĩ | 0.13 | 1 | | 1 | 1 1 | T | 1 2. |
| 8 12 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .50 .40 .00 | 3.5 | 1 | | Ĺ | 0.09 | ì | 17.80 | 1 | 0.10 | 1 | | 1 | Î I | 1 | 1 2. |
| 9 10 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .40 .00 .50 | 3.1 | | 0.08 | | 0.09 | - | 17.90 | | | | | 1 | 1 1 | 1 | 1 5. |
| 10 7 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .00 I | | 1 1 | | | 0.08 | - | 26.80 | 11201 | | 196 | | 1 | 0.04 | Î | 1 5. |
| 11 9 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .50 | | | | | 0.08 | | 23.00 | 100 | | | | ī | t i | 1 | 5. |
| 12 9 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | | | | | | 0.09 | | 21.80 | | | ì | | Ť | T I | 1 | 1 5. |
| 13 9 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | .60 | | | 0.10 | 17 | 0.10 | | 19.20 | - | | î | | ï | î î | ī | 5. |
| 14 9 15 20 16 13 17 8 18 10 19 8 20 5 | | 2.7 | | | | 0.09 | | 20.70 | | | i | | i | Î Ī | 1 | 5. |
| 15 20 16 13 17 8 18 10 19 8 20 5 | | | | 0.09 | - 7 | 0.09 | - 8 | 20.50 | 198 | | í | | Ĺ | ī ī | ĩ | 1 5. |
| 16 13 17 8 18 10 19 8 20 5 | | 4.1 | | | | 0.09 | - | 20.90 | | | i | | i | i i | i | 1 6. |
| 17 8 18 10 19 8 20 5 | .30 | | | 0.09 | | 0.10 | | 20.70 | - 20 | | i | | i | î î | í | 1 6. |
| 18 10 19 8 20 5 | 100000000000000000000000000000000000000 | 2.1 | | | | 0.08 | - 2 | 20.40 | 6.5 | | 189 | | i | i i | ì | 1 6. |
| 19 8 20 5 | .60 | | | | | 0.08 | - 0 | 17.90 | 12 | | î | | 1 | î î | ī | 7. |
| 20 5 | .20 | | | | | 0.09 | | 20.60 | | | ï | | í | i i | i | 1 7. |
| | .30 | | | 0.09 | | 0.09 | - 0 | 19.00 | | | 100 | | i | i i | i | 8. |
| 21 2 | .40 | | | | | 0.09 | | 19.30 | | | | | i | i i | ì | 8. |
| 22 6 | 5.50 | 200 | _ 10 | | 1 | 0.08 | | 22.00 | | | î. | | ì | i i | i | 8. |
| | 5.10 | •/ (000000000000000000000000000000000000 | 200 | 0.08 | (3) | 0.08 | - 15 | 21.90 | | | Ì | | ì | 1 1 | Î. | 8. |
| | 1.70 | EX HE ICA | - 25 | 0.07 | 17.1 | 0.08 | | 20.50 | | | i | | - | ř i | î | 8. |
| | 3.10 | 1000 | | 0.09 | 100 | 0.08 | 180 | 21.30 | | | i | | i | î i | ï | 9. |
| | 3.80 | | (2) | 0.09 | | 0.09 | | 20.10 | | Carried Control | i | | î | 0.13 | i | 10. |
| | | | | 0.08 | | 0.08 | 7 | 21.30 | 100 | | i | | î | 1 1 | ì | 1 10. |
| mental at these | 2.70 3.50 | N 1515-101 | - 3 | 0.03 | 100 | 0.08 | - 3 | 20.00 | | | | | Ť | î i | 1 | 1 10. |
| 70.00 | | | | | | 0.08 | 17.1 | | | | 9. | | i | i i | ľ | 111. |
| | .30 | | | 0.08 | | 0.08 | (2.0 | 21.40 | 177 | | 1 | | | 1 | i | 1 11. |
| 30 4 31 | 311 | 0.5 | 1 | 0.07 | 1 | 0.08 | 1 | 21.40 | 1 | 0.08 | 1 | | 1 | 1 1 | ř | 1 |

^{*} INDICATES POLYALUMINUM CHLORIDE

TABLE 2.1: PARTICULATE REMOVAL PROFILE (MAY 1986)

| DATE I | TUI | RB1 | DITY | (F) | ru) | | | l | COAGULANT | | | | | | METAL I | g/L) | | рН | TEMP DEG. C |
|--------|-------|-----|------|------|--------|------|--------|------------|-----------|-----|------|----|------|---|---------|--------|----|----|------------------------|
| 1 | Raw | ì | Set. | 1 | Filter | 1 | Treat. | 1 | mg/L | 1 | mg/L | 1 | mg/L | I | Raw | | | | |
| 1 1 | 8.80 | 1 | 0.96 | 1 | 0.09 | 1 | 0.09 | 1 | 23.60 | 1 | 0.16 | Ţ | | 1 | | ı | 1 | 1 | 1 12.0 |
| 2 | 5.90 | 1 | 0.71 | 1 | 0.09 | 1 | 0.08 | I | 26.00 | 1 1 | 0.14 | 1 | | 1 | | 1 | I | 1 | 1 12.0 |
| 3 | 3,50 | 1 | 0.83 | 1 | 0.09 | 1 | 0.09 | Ţ | 18.70 | 1 | 0.09 | I | | 1 | | ľ | 1 | 1 | 11.5 |
| 4 | 3.30 | 1 | 0.67 | 1 | 0.10 | 1 | 0.09 | 1 | 18.60 | 1 | 0.12 | 1 | | 1 | | 1 | 1 | ı | 1 11.5 |
| 5 | 7.10 | 1 | 0.71 | 1 | 0.10 | 1 | 0.11 | 1 | 20.70 | 1 | 0.16 | 1 | | 1 | | 1 | 1 | 1 | 1 12.0 |
| 6 | 6.50 | 1 | 0.77 | 1 | 0.12 | 1 | 0.12 | 1 | 22.10 | 10 | 0.14 | ı | | ı | | 1 | 1 | I | 1 12.0 |
| 7 1 | 10.30 | 1 | 0.99 | 1 | 0.12 | 1 | 0.12 | 1 | 20.30 | 1 | 0.13 | 1 | | 1 | | L - | 1 | Į | 12.5 |
| 8 | 9.60 | 1 | 0.91 | 1 | 0.14 | 1 | 0.12 | 1 | 20.50 | 1 1 | 0.14 | 1 | | 1 | | 1 | 1 | 1 | 1 14.0 |
| 9 1 | 6.40 | 1 | 0.94 | 1 | 0.12 | 1 | 0.12 | 1 | 20.30 | 1 3 | 0.14 | 1 | | 1 | | L | 1 | ī | 1 14.5 |
| 10 | 6.10 | 1 | 0.69 | 1 | 0.11 | 1 | 0.11 | 1 | 22.30 | 1 | 0.16 | 1 | | 1 | | l | 1 | 1 | 1 14.0 |
| 11 | 4.20 | 1 | 0.78 | 1 | 0.11 | 1 | 0.11 | 1 | 20.50 | 1 | 0.08 | 1 | | 1 | | 1 | 1 | 1 | 1 14.5 |
| 12 | 3.90 | 1 | 0.71 | 1 | 0.11 | 1 | 0.10 | 1 | 19.10 | 1 | 0.13 | 1 | | 1 | | 1 | t | 1 | 1 15.5 |
| 13 | 3.60 | 1 | 0.64 | 1 | 0.11 | 1 | 0.11 | 1 | 20.10 | 1 | 0.12 | T | | 1 | | 1 | 1 | 1 | 1 15.0 |
| 14 | 3.40 | Ĩ | 0.44 | 1 | 0.10 | 1 | 0.11 | 1 | 19.00 | 1 | 0.14 | 1 | dake | 1 | | 1 | 1 | 1 | 15.0 |
| 15 | 4.10 | ì | 0.60 | ï | 0.10 | 1 | 0.09 | 1 | 21.90 | 1 | 0.13 | 1 | | 1 | | 1 | 1 | 1 | 1 15.0 |
| 16 | 8.50 | 1 | 0.67 | 1 | 0.12 | 1 | 0.11 | ĵ. | 21.10 | 1 | 0.14 | 1 | | 1 | | 1 | 1 | 1 | 1 16.0 |
| 17 1 | 4.80 | î | 0.40 | i | 0.11 | 1 | 0.11 | 1 | 20.00 | 1 | 0.09 | 1 | | 1 | | 1 | 1 | I | 1 16.0 |
| 18 1 | 4.40 | î | 0.67 | 1 | 0.12 | 1 | 0.12 | 1 | 18.90 | 1 | 0.11 | 1 | | 1 | | 1 | 1 | 1 | 1 16.0 |
| 19 | 5.90 | Ť | 0.61 | | 0.13 | 1 | 0.12 | 1 | 20.80 | Î. | 0.13 | Ĩ | | 1 | | 1 0.10 | 1 | 1 | 1 16.0 |
| 20 1 | 6.40 | 1 | 0.83 | î | 0.11 | | 0.12 | 1 | 20.20 | L | 0.18 | ī | 181 | 1 | | 1 | 1 | 1 | 1 15.5 |
| 21 1 | 6.00 | ì | 0.85 | | 0.10 | Ĺ | 0.11 | | 21.30 | 1 | 0.14 | 1 | | 1 | | 1 | 1 | 1 | 1 15.5 |
| 22 | 5.10 | i | 0.58 | | 0.09 | 1001 | 0.09 | 1 | 21.90 | 1 | 0.09 | Ī | | 1 | | i | 1 | 1 | 15.5 |
| 23 1 | 5.70 | i | 0.73 | 100 | 0.11 | | 0.11 | 1 | 20.50 | 1 | 0.07 | 1 | | 1 | | t | 1 | L | 1 15.5 |
| 24 1 | 4.90 | 330 | 0.54 | 150 | 0.11 | | 0.11 | 1 | 21.60 | 1 | 0.09 | 1 | | ſ | | 0.12 | 1 | t | 15.5 |
| 25 | 3.50 | i | 0.59 | | 0.11 | | 0.11 | | 17.30 | 11 | 0.15 | 1 | | 1 | | 1 | Ĭ | 1 | 1 15.5 |
| 26 | 4.30 | i | 1.00 | | | - | 0.11 | ì | 19.90 | 1 | 0.08 | 1 | | 1 | | 1 | 1 | Ī | 1 16.5 |
| 27 | 2.70 | - | 0.46 | - | 0.10 | 921 | 0.10 | | 20.80 | 1 | 0.08 | 1 | | 1 | | 1 | 1 | 1 | 1 17.0 |
| 28 1 | 2.70 | - 6 | 0.33 | 200 | 0.10 | 100 | 0.11 | 104.1 | 20.50 | 1 | 0.14 | 1 | | 1 | | 1 | i. | 1 | 1 17.5 |
| 29 1 | 3.00 | i | 0.33 | 1001 | 0.10 | | 0.10 | | 20.40 | 1 | 0.14 | ĺ | | 1 | | Ť | 1 | T | 1 17.5 |
| 30 1 | 3.80 | i | 0.32 | 550 | 0.09 | | 0.09 | -22 | 19.00 | 1 | 0.15 | Ì | | 1 | | 1, | 1 | 1 | 1 18.0 |
| 31 | 3.60 | -6 | 0.33 | | | 0.75 | 0.10 | | 23.70 | 3. | | i. | | 1 | | 1 | T | T | (17.5 |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JUN 1986)

| DATE | | RB) | DITY | (F | TU) | | | Ī | COAGULANT | | COAG. | | | | METAL RE | | | рН | - | TEMP EG. C |
|----------|--|-------|------|-------|--------|-----|--------|------|-----------|------|--------------|-----|------|---|----------|--------|------|------|---|---------------|
| | Raw | ı | Set. | 1 | Filter | 1 | Treat. | Î | mg/L | 1 | mg/L | i | mg/L | I | Raw | Treat. | Raw | | | |
| 1 | 3.70 | | 0.65 | 1 | 0.10 | 1 | 0.09 | ī | 20.00 | 1 | 0.10 | ı | | 1 | ĺ | ı | | 1 | I | 17.5 |
| 2 | 4.30 | 1 | 1.04 | 1 | 0.09 | I | 0.10 | 1 | 21.50 | I | 0.08 | 1 | | ı | 1 | 1 | | 1 | 1 | 17.5 |
| 3 | 9,30 | 1 | 1.12 | 1 | 0.10 | 1 | 0.08 | l. | 19.50 | 1 | 0.15 | 1 | | 1 | 1 | J | | 1 | 1 | 17.5 |
| 4 | 5.30 | 1 | 0.60 | 1 | 0.10 | 1 | 0.11 | 1 | 20.90 | 1 | 0.14 | 1 | | 1 | 1 | | | ı | 1 | 18.0 |
| 5 | 5.00 | T | 0.39 | 1 | 0.11 | 1 | 0.11 | 1 | 20.90 | 1 | 0.07 | 1 | | 1 | Ī | 1 | | 1 | 1 | 18.0 |
| 6 | 4.50 | T | 0.71 | 1 | 0.09 | 1 | 0.10 | ï | 20.90 | 1 | 0.09 | 1 | | 1 | 1 | 1 | | ı | 1 | 18.0 |
| 7 | | - 10 | | | 0.10 | 1 | 0.10 | 1 | 19.90 | 1 | 0.11 | 1 | | 1 | 1 | i | | 1 | 1 | 18.0 |
| 8 | | - 3 | 0.29 | _ | 0.10 | | 0.10 | 1 | 19.20 | | | | | 1 | Ī | 1 | | 1 | 1 | 18.5 |
| 9 | . (2002) 4000 | 1041 | 0.72 | 141 | | | 0.09 | | 20.40 | 1 | 0.17 | 1 | | 1 | ĺ | 1 | | 1 | 1 | 19.0 |
| 10 | All the second | 100 | 0.56 | - 270 | | | 0.09 | | 20.80 | | | | | 1 | 1 | 1 | | 1 | 1 | 19.0 |
| 11 | D. Diener | | 0.33 | | | | 0.10 | | 22.10 | | | | | ī | Ī | 1 | | Ĭ | 1 | 19.5 |
| 12 | , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | (8) | | | 0.10 | 194 | 27.80 | | | 1 | | ı | ì | 1 | | 1 | 1 | 20.0 |
| 13 | Vec. successivelib. | | | | | | 0.13 | 10.1 | 36.50 | | | Ĭ | | ı | 1 | 1 | | 1 | 1 | 20.0 |
| 14 | A CONTRACTOR OF THE PARTY OF TH | 400 | | | | | 0.18 | | 24.00 | | | ī | | 1 | Ĩ | i | | Î | 1 | 20.0 |
| 15 | | | | | | | 0.16 | 141 | 26.10 | | | ĺ | | 1 | 1 | 1 | | ì | 1 | 20.0 |
| 16 | Design editeding | 100 | | 170 | 0.18 | 3.7 | 0.18 | 1633 | 25.00 | | | 1 | | 1 | Ĩ | | | 1 | 1 | 20.5 |
| 17 | The second | 327 | | | 0.11 | | 0.15 | 100 | 24.80 | 1.91 | | i | | 1 | Î | i | | 1 | 1 | 20.8 |
| 18 | la management of the same | | 1.48 | 1,50 | | | 0.12 | | 22.30 | | | ī | | i | i | ı | | 1 | 1 | 21.0 |
| 19 | | | 1.14 | | | 100 | 0.13 | | 19.20 | 100 | | Ť | | 1 | Ĩ | 1 | | 1 | 1 | 21.0 |
| 20 | | - 10 | | 3.5 | 0.12 | | 0.12 | | 17.96 | - 8 | | i | | ī | i | i | | 12 2 | 1 | 21.0 |
| 21 | In the same seasons | | 0.89 | - 15" | | | 0.12 | | 21.80 | | | i | | ì | 1 | | | ī | 1 | 21.0 |
| 22 | | | | | 0.11 | | 0.12 | | 19.00 | | | Ŷ | | i | i | 0.12 | | ì | L | 22.0 |
| 23 | The second and the second | 170 | | 18 | 0.16 | | 0.13 | -75 | 20.50 | - 2 | 2001 HERADON | i | | ì | ñ | | | i | Ĺ | 22.0 |
| 24 | | 33. | 0.79 | | | | 0.11 | | 17.50 | | | | | i | i | | | í | ì | 21.5 |
| 25 | 1 | | 0.68 | | | | 0.08 | | 21.00 | | | | | Ī | i | | | i. | ì | 21.5 |
| | 1 14.60 | 51 | | | | | 0.08 | | 21.80 | | | | | i | | | | Ī | 1 | 22.0 |
| 27 | | | 0.55 | - 15 | | 18- | 0.10 | | 22.40 | | | | | 1 | i | | 8.04 | 7.34 | 1 | 22.0 |
| 28 | The same of the same of | - 8 | | | | | 0.10 | | 20.30 | - | | - | | 1 | î | | 4/ | | i | 22. |
| 29 | | | | - | | 100 | 0.10 | 107 | 20.60 | 7 | | 100 | | i | | | | i | i | 22.5 |
| | di mananana senta | 92.11 | 0.97 | | | 7.5 | 0.07 | | 20.30 | 100 | | | | i | 1 | 0.06 | 7.73 | 7.38 | i | 22. |
| 30 31 | The same | 1 | 0.91 | | 0.70 | 1 | 0.07 | | 20.30 | i. | 0.09 | 1 | | T | 1 | | | 1 | i | (Marile) |

TABLE 2.1: PARTICULATE REMOVAL PROFILE (JUL 1986)

| DATE I | | TUI | RB] | DITY | (F | TO) | | COAGUL | AN: | r COAG. AID | 0.1 | | | METAL Al (m | Academic States | 1 | | pH | [| I I TI I DEG | EMP |
|--------|--------|--------|-----|------|----|--------|--------|--------|-----|--------------------|-----|------|-------|----------------|-----------------|---|------|----|-------|--------------------|------|
| 1 | l I | Raw | 1 | Set. | 1 | Filter | Treat. | mg/L | 6 | mg/L | l | mg/L | į | Raw | Treat. | 1 | Raw | 1 | | (7) | |
| 1 | [| 10.60 | 1 | 0.81 | 1 | 0.60 | 0.06 | 20. | 90 | 0.19 | Ĭ | | ı | | 1 | 1 | 8.12 | ı | 7.61 | 1 2 | 21.5 |
| 2 | Ĺ | 11.90 | 1 | 0.68 | 1 | 0.06 | 0.06 | 19. | 70 | 0.16 | 1 | | 1 | | 1 | 1 | 8.16 | 1 | 7.63 | 1 2 | 21.8 |
| 3 | 1 | 11.90 | 1 | 1.00 | 1 | 0.06 | 0.06 | 20. | 40 | 10.14 | 1 | | 1 | | J. | 1 | 8.24 | 1 | 7.53 | 1 2 | 21.5 |
| 4 | 1 | 15.50 | 1 | 1.33 | 1 | 0.08 | 0.06 | 19. | 90 | 10.20 | 1 | | 1 | | 1 | 1 | | 1 | | 1 2 | 22. |
| 5] | Ē | 18.70 | 1 | 0.88 | 1 | 0.11 | 0.10 | 20. | 70 | 0.12 | 1 | | 1 | | Î. | ı | | J | | 1 2 | 22. |
| 6 1 | Ι. | 8.40 | 1 | 0.57 | 1 | 0.09 | 0.09 | 21. | 30 | 10.20 | 1 | | 1 | | 1 | 1 | | 1 | | 2 | 22. |
| 7 1 | Ė | 7.20 | 1 | 0.52 | 1 | 0.07 | 0.08 | 21. | 40 | 0.11 | Ĩ | | 1 | | 1 | 1 | | 1 | | 2 | 22. |
| 8 | ř | 7.50 | 1 | 1.14 | 1 | 0.06 | 0.07 | 20. | 80 | 0.18 | l | | 1 | | 1 | 1 | | ŀ | | 1 2 | 22. |
| 9 1 | ř | 8.90 | 1 | 0.64 | 1 | 0.06 | 0.07 | 21. | 60 | 10.14 | Ĩ | | 1 | | 0.10 | 1 | | 1 | | 1 2 | 22. |
| 10 | Ė | 6.80 | 1 | 1.40 | 1 | 0.07 | 0.06 | 21. | 30 | 0.21 | I | | 1 | | J | 1 | | 1 | | 1 2 | 23. |
| 11 | Ē | 6.00 | 1 | 0.95 | Ī | 0.07 | 0.07 | 20. | 80 | 0.08 | l | | 1 | | ĺ | l | | Ī | | | 23. |
| 12 | | 9.40 | 1 | 0.49 | 1 | 0.07 | 0.07 1 | 19. | 80 | 0.17 | 1 | | Í | | 1 | 1 | | Ţ | | 1 2 | 23. |
| 13 | Ĺ | 8.10 | 1 | 0.63 | 1 | 0.07 | 0.08 | 19. | 70 | 0.12 | 1 | | ì | | 1 | 1 | | 1 | | 1 2 | 23. |
| 14 | Ē | 10.00 | 1 | 1.01 | ī | 0.07 | 0.08 | 19. | 60 | 10.15 | 1 | | 1 | | ĺ | ı | | 1 | | 1 2 | 24. |
| 15 | ĺ | 7.70 | 1 | 1.18 | 1 | 0.08 | 0.08 | 20. | 50 | 10.20 | 1 | | 1 | | 1 | ŀ | | 1 | 28 | 1 2 | 4. |
| 16 | Ĺ | 5.80 | 1 | 0.84 | 1 | 0.09 | 0.09 | 20. | 30 | 0.12 | 1 | | 1 | | 1 | 1 | | 1 | | 1 2 | 24. |
| 17 1 | | 4.80 | 1 | 0.82 | 1 | 0.09 | 0.10 | 20. | 30 | 0.13 | Ĺ | | Î | | 0.12 | 1 | | Ĩ | | 1 2 | 25. |
| 18 / | ř | 4.60 | Ī | 0.45 | 1 | 0.08 | 0.09 | 20. | 20 | 0.15 | I | | 1 | | T | 1 | | 1 | | 1 2 | 25. |
| 19 | | 4.50 | 1 | 0.36 | 1 | 0.08 | 0.08 | 22. | 10 | 0.12 | ľ | | I | | 1 | 1 | | 1 | | 1 2 | 4. |
| 20 1 | | 3.60 | Ť | 0.27 | Ī | 0.07 | 0.08 | 22. | 20 | 0.17 | 1 | | 1 | | 1 0.09 | 1 | | 1 | | 2 | 4. |
| 21 | Ď. | 3.90 | 1 | 1.79 | 1 | 0.07 | 0.07 [| 20. | 20 | 0.13 | 1 | | Î | | ī | 1 | | Ī | | 1 2 | 4. |
| 22 | | 3.70 | | | | 0.08 (| 0.07 | 20. | 30 | 10.16 | Ĺ | | 1 | | ı | 1 | | 1 | | 1 2 | 25. |
| 23 | | 4.60 | 1 | 0.61 | 1 | 0.08 | 0.08 | 20. | 10 | 0.15 | ı | | 1 | | 1 | 1 | | -1 | | 1 2 | 6. |
| 24 1 | Ē | 5.50 | Ĩ | 0.92 | Î | 0.12 | 0.11 | 21. | 60 | 10.14 | 1 | | 1 | | i | 1 | | Ī | | 1 2 | 6. |
| 25 | | 4.90 | 1 | 0.98 | î | 0.13 | 0.11 | 21. | 80 | 0.17 | 1 | | 1 | | 1 | 1 | | Ĩ | | 1 2 | 27. |
| 26 | | 10.60 | 1 | 0.47 | 1 | 0.11 | 0.09 | 18. | 40 | 10.14 | 1 | | 1 | | 1 | 1 | | 1 | | 1 2 | 6. |
| 27 1 | | 10.60 | 1 | 0.83 | Í | 0.12 | 0.09 | 20. | 30 | 10.09 | 1 | | 1 | | Ť | 1 | | 1 | | 1 2 | 25. |
| 28 | 1 | | | | | 0.16 | 0.10 | 19. | 20 | 10.17 | 1 | | l | | 1 | 1 | | 1 | | 1 2 | 6. |
| 29 | | - 4.20 | | | | 0.14 | 0.13 | 19. | 80 | 10.17 | 1 | | 1 | | 1 | 1 | | 1 | | 1 2 | 6. |
| 30 | 1 | 3.60 | 1 | 0.80 | 1 | 0.09 | 0.09 [| 21. | 10 | 0.15 | l | | 1 | | 1 0.14 | 1 | 8.32 | 1 | 7.75 | 2 | 6. |
| 31 1 | | 3.00 | Î | 0.81 | Ī | 0.11 | 0.09 | 20. | 00 | 10.14 | Î | | like. | | i | j | 8.40 | i | 7.55 | 1 2 | 7. |

TABLE 3.0: DISINFECTION SUMMARY

| | ı | | | 1986 | 5 | | 1 | 1 | | 196 | | | | 11 | | | 198 | | | ne per ner nerven Mile per | 11 11 | | 19 | 83 | | |
|----------------------------|--------|--------|------|--------|------|----------|----------|--------|----------|--------|--------|----------|--------|-------|------|----------|--------|---------------|----------|----------------------------|----------|----------|-------|------|----------|--------|
| | PRE- | CHLORI | ITA | ON I | POST | -CHLORIN | NATION I | PRE- | CHLORINA | ATION | POST | -CHLORIN | ATION | P | RE-C | HLORINAT | TION | POST | -CHLORIN | | PRE-C | CHLORINA | ATION | POST | -CHLORII | NATION |
| | I MAX. | MIN | 1 | AVG. | MAX. | MIN. | AVG. | | | AVG. | | MIN. | | 100 | | | | ¥ 12112-2-11- | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG |
| Cl2 Demand | 1 | 1 | i | | 1 | 1 | 1 | 1 | i. | ĺ | 1 | 1 | i | ET | | | ř | ì | Į. | 1 | 11 | Ť | 1 | 1 | i | ï |
| | 0.82 | 0.41 | 1.0 | 0.59 [| 0.66 | 1 0.39 | 0.52 | 1.30 | 0.87 | 1 1.07 | 1 0.42 | 1 0.26 | 0.33 | 11 1. | 02 | 0.66 | 0.88 | 0.29 | 1 0.24 | 0.27 | 11 | į. | ŧ | 4 | Ar | 1 |
| STATES AREAS AND PROPERTY. | I | 1 | ï | 1 | | Ĭ | | 1 | Ĺ | ř | 1 | 1 | 1 | 11 | | | t. | 1 | J. | Ī | 11 | Ĺ | ī | 1 | 1 | 1 |
| Ammonia | ř | į. | ı | 1 | | 1 | | 1 | i | 1 | 1 | F | ï | 11 | 1 | į į | 1 | ī | 1 | 1 | 11 | 1 | t | 1 | i . | E |
| | 1 | ı | r | | | į. | ı i | 1 | Ĭ. | ì | Î. | 1 | ī | 11 | - 1 | . 1 | 1 | 1 | ľ | i | H | T | 1 | 1 | 1 | 1 |
| SO2 | ř. | i | Î | 1 | | 1 | | 1 | ı | ř | ī | 1 | ī | 11 | - | | 1 | 1 | 1 | i. | 11 | Í | 1 | 1 | 1 | 1 |
| | ì | 1 | Û | 1 | | 1 | 1 1 | 1 | i . | 1 | 1 | , | 9 | 1.1 | - 1 | | í. | 1 | ï | j. | 11. | T. | X | ſ | i. | Ĺ |
| Resid. Cl2 Free | 1 | ī | À | 1 | | 1 | 1 1 | 4 | i | î | i. | ĵ | 1 | 11 | 3 | i ii | ı | 1 | I . | ï | 11 | 4 | i. | 1 | 1 | I |
| Resid. Cl2 Comb. | 1 | ì | ì | | | î. | 1 1 | 1 | 1 | i | i | i | 1 | 11 | - 1 | 1 | ı | 1 | F | 1 | U. | T | £ | 1 | 1 | 1 |
| Resid. Cl2 Total | 1 0.24 | 1 0.21 | 1.0 | 0.23 1 | 0.78 | 0.73 | 1 0.76 | 0.19 | 0.14 | 0.17 | 0.75 | 0.54 | 1 0.66 | 11 0. | 31 | 0.16 | 0.23 | 0.75 | 0.58 | 0.67 | 11 | ĵ. | ī | 1 | Ī | 1 |
| | 1 | 1 | u pa | [| | 1 | 1 1 | | | 1 | 1 | | 1 | 11 |] | | | 1 | 1 | j | 11 | 1 | 1 | 1 | 1 | ı |
| Cl2 Demand | 1 | 1 | i | i i | | i | i i | i | ì | Ī | T | i | 1. | 11 | j | | Ė | 1 | t. | 1 | 1.1 | 1 | 1 | t . | 4: | 1 |
| | 1 0.80 | 1 0.46 | 1.0 | 0.58 | 0.58 | 1 0.43 | 0.51 | 1 1.10 | 0.74 | 1 0.93 | 0.35 | 1 0.24 | 1 0.29 | 11 1. | 50 | 0.66 | 0.93 | 0.46 | 1 0.20 | 0.29 | LL | 1 | 1 | t | ī. | 1 |
| SEC DISTRACT | ī | ſ | ī | 1 | | I . | 4 4 | ı | 1 | 1 | 1 | t | I. | 11 | i | | 1 | Ĩ | Ī | 1 | 1.1 | 1 | 1 | Ĺ | 1 | 1 |
| Ammonia | į. | 1 | i | 1 | | 1 | i i | T | Î. | ĵ | I | 1 | 1. | 11 | 1 | r j | ı | Ĭ | Ī. | L | 11 | 1 | 1 | 1 | 1 | 1 |
| | 1 | 1 | ï | | | 1 | 1) | 1 | Î | i | ř | ř | 1 | 11 | d | 1 | 1 | 1 | T. | 1. | U | II. | 1 | ı | £ | 1 |
| SO2 | 1 | 1 | 1 | 1 | | 1 | 1 1 | 1 | 1 | 1 | 1 | 1 | 1 | 11 | 1 | L | 1 | 1 | Ť | 1 | 1.f | ì | 1 | Ĭ. | T . | 1 |
| | 1 | 1 | ì | i | | ı. | 1 1 | a. | 1. | ì | ì | i | 1 | 11 | 1 | | 1 | 1 | I. | 1 | 11 | F | ii. | I . | ì | 1 |
| Resid. Cl2 Free | 1 | 1 | ì | i | | ř. | 1 1 | 1 | 1 | ľ | J. | 1 | t | 11 | ì | 1 | 1 | ì | 1 | 1 | H. | 1 | 1 | ř. | 1 | 1 |
| Resid. Cl2 Comb. | 1 | L | 1 | ì | | Ĩ. | 1 | i | ī | 1 | 1 | î | 1 | 11 | 4 | L . | t | 1 | Ĭ. | 1 | 11 | 1 | 1 | 1 | 1 | 1 |
| Resid. Cl2 Total | 0.24 | 1 0.21 | | 0.22 | 0.95 | 1 0.65 | 0.77 | 1 0.22 | 0.16 | 0.19 | 1 0.75 | 1 0.58 | 1 0.66 | 11 0. | 29 | 0.16 | 0.22 | 1 0.79 | 1 0.50 | 1 0.67 | (1 | 1 | 1 | 1 | 1 | 1 |
| | 1 | 1 | -1- | | | 1 | 1 | 1 | | | 1 | 1 | 1 | - 11 | | | | 1 | 1 | 1 | 11 | 1 | 1 | 1 | 1 | 1 |
| C12 Demand | ſ | È | 1 | ī | | Ĺ | 1 1 | 1 | ĩ | 1 | 1 | 1 | i | 11 | 1 | | T. | T: | 1 | 1 | H | 1 | A. | J. | 1 | 1 |
| | 0.68 | 1 0.50 | T | 0.59 | 0.57 | 0.41 | 0.50 | 1 1.65 | 0.82 | 1 1.12 | 1 0.46 | 1 0.26 | 0.35 | 11 1. | 80 | 0.82 | 1.32 | 1 0.51 | 1 0.27 | 1 0.40 | 11 | 1 | 1 | 1 | 1 | 1 |
| | I | 1 | 1 | - 1 | | T | 1 1 | LI. | 1 | 1 | Ī | ī | 1 | 11 | 1 | î 3 | ī | t | 1 | 1 | H. | Ť | T | 1 | 1 | 1 |
| Ammonia | î | 1 | 1 | i | | Ī | 1 | Ů. | 1 | 1 | T. | 1 | 1 | 1.1 | | | ľ | 1 | 1 | 1 | 11 | 1 | 1 | ŧ. | 1 | 1 |
| | Ī | Ĭ. | 1 | i | | t | î i | i i | 1 | 1 | 1 | 1 | 1 | 11 | 1 | 1 | 1 | F | 1 | 1 | H | T | 1 | Ĺ | 1 | 1 |
| SO2 | ı | ı | 1 | 1 | | 1 | 1 | 11 | 1 | 1 | 1 | 1 | 1 | 11 | | ı | ï | .1 | Ī | 1 | 11 | 1 | 1 | 1 | 1 | 1 |
| XHEAGA | 1 | 1 | ı | 1 | | Ĩ | 1 | 1 | Ĭ. | 1 | Ĭ | 1 | 1 | t) | | ı | ī | 1 | 1 | 1 | EL. | 1 | 1 | 1 | 1 | Į. |
| Resid. Cl2 Free | 1 | ſ | ĵ | i | | Ĺ | i i | i i | ī | 1 | 1 | 1 | Ĺ | 11 | | 1 | 1 | 1 | E | 1 | H. | 1 | 1 | 1- | 1 | 1 |
| Resid. Cl2 Comb. | 1 | 1 | 1 | 9 | | 1 | t. | (1 | 1 | 1 | T | 1 | 4 | 11 | | k . | 1 | Ĥ | Ĺ | 1 | 11 | 1 | 1 | 1 | ı | 1 |
| Resid. Cl2 Total | | 1 0 21 | 1 10 | 0.23 | 1.00 | 0.65 | | | 1 0.14 | 1 0.18 | 1 0.78 | 1 0.55 | 1 0.66 | 11 0. | .29 | 0.22 | 1 0.25 | 1 0.75 | 0.58 | 1 0.67 | TT. | 1 | T. | Ī | 1 | ī |

TABLE 3.0: DISINFECTION SUMMARY

| | | 1 | | 19 | 86 | | | 11 11 | | 19 | | | | 11 | | 19 | | | | II II | | 19 | | | |
|-----|------------------|--------|----------|--------|--------|--------|--------|----------|---------|--------|--------|---------|--------|---------|----------|--------|--------|-----------|--------|----------|---------|-------|-------|------|-----|
| | | | CHLORINA | | 2 | | MOITAN | II PRE- | CHLORIN | ATION | POST | -CHLORI | NATION | II PRE | -CHLORIN | ATION | (POST | r-chlorii | MOITAN | PRE- | CHLORIN | ATION | POST- | | |
| | ÷ | 1 | | | | MIN. | AVG. | II MAX. | | | - | I MIN. | I AVG. | 402 | MIN. | | | | | II MAX. | | | | MIN. | AVG |
| R I | Cl2 Demand | l see | 1 | 1 | 1 | 1 1 | 1 | 11 | i - | 1 | I amen | 1 | Ĭ. | 11 | d | 1 | 1 | 1 | ı | 11 | ì | ï | i | 1 | t |
| 1 | Cl2 Dosage | 1 0.71 | 1 0.51 | 0.60 | 1 0.61 | 1 0.39 | 0.52 | 11 2.66 | 0.98 | 1 1.70 | 1 0.80 | 0.31 | 1 0.52 | 11 1.80 | 1 1.30 | 1 1.48 | 1 0.52 | 1 0.38 | 1 0.43 | 11 | 1 . | 1 | t | 1 | T |
| 1 | | 1 | ı | ì | i | I | ī | 11 | ī | 1 | 1 | 1 | 1 | TT. | 1 | 1 | T . | 1 | 1 | 1.1 | 1 | T | £. | 1 | ¥. |
| ĭ | Ammonia | 1 | 1 | 1 | L. | d. | r | 11 | A: | 1 | E | I. | d. | 11 | 1 | 1 | 1 | 1 | 1 | 11. | ı | 1 | ï | 1 | 1 |
| 1 | | 1 | 1 | 1 | ı | ì | 1 | Í Í | i | 1 | I . | 1 | 1 | 11 | 1 | 1 | į | į | 1 | 11 | 1 | 1 | I | 1 | 1 |
| 1 | SO2 | l. | i | Ì | Ī | 3 | I | 11 | 1 | 1 | 1 | F | T | 11 | 1 | 1 | 1 | 1 | 1 | 11 | 4 | 1 | £ | 1 | 1 |
| 1 | | t | Į. | 1 | Ł | 1 | 1 | u . | F | 1 | 1 | 1. | 1 | ł t | 1 | J. | 4 | 1 | I | 11: | 1 | 1 | Î , | 1 | 1 |
| 4 | Resid. Cl2 Free | 1 | 1 | 1 | 1 | 1 | Ï . | 1.1 | ì | 3. | Ĺ | 1 | 1 | 11 | 1 | 1 | 1 | 1 | 1 | 11 | I. | 1 | j | ť | 1 |
| 1 | Resid. Cl2 Comb. | 1 | 1 | i | 4 | ¥ | 1 | 11 | T | Ť | t | 4 | 1 | 1.1 | ī | 1 | 1 | 1 | 1 | H. | 1 | li. | 1 | 1 | 1 |
| 1 | Resid. Cl2 Total | 0.76 | 0.22 | 1 0.27 | 1 0.90 | 1 0.60 | 1 0.76 | 11 0.25 | 1 0.16 | 1 0.20 | (0.81 | 1 0.56 | 1 0.68 | 11 0.32 | 0.15 | 1 0.23 | 1 0.72 | 1 0.59 | 0.67 | H | .1. | Ji | t. | ı | 1 |
| 1 | | 1 | ļ | 1 | . 1 | . (| 1 | 11 | 1 | 1 | 1 | 1 | (| 11 | - [| 1 | 1 | . 1 | 1 | u | 1 | 1 | [| 1 | Î |
| Y | C12 Demand | 1 | 1 | 1 | £. | 1 | 1 | 11 | £. | 1 | ľ | 1 | T | 11 | 1 | Ĺ | 1 | 1 | I | ш | I. | 1 | 1- 7 | F | E |
| 1 | Cl2 Dosage | 0.80 | 0.55 | 0.62 | 1 0.70 | 1 0.47 | 0.54 | 11 1.90 | 0.53 | 1 0.86 | 1 0.65 | 1 0.47 | 1 0.55 | 11 3.30 | 1 0.93 | 1 2.03 | 1 0.93 | 0.26 | 0.58 | D: | F | 4 | 1 | 1 | I. |
| 1 | | T | r- | 1 | 1 | 1 | 1 | 1.1 | 1 | 1 | T . | I | 1. | 11 | Ĭ. | 1 | 1 | 1 | 1 | 11. | I. | 1 | 1 | 1 | 1 |
| 1 | Ammonia | ì | £ | ī | 1 | T. | ì | 11 | 1 |) | 1 | I | ľ | TT. | Ţ | 1 | ï | 1 | 1 | 11 | T | ī | i i | 1 | 1 |
| 1 | | 1 | T. | 1 | 1 | 1 | 1 | H | 1 | F | T | 1 | 1 | T. | L | 1. | 1 | 1 | 1 | 11 | 1 | 1 | E ? | J. | 1 |
| 1 | SO2 | 1 | I. | 1 | 1 | 1 | 1 | 4.1 | 1 | 1 | 1 | ľ | L | 11 | ı | ī | -Ĺ | 1 | 1 | 11 | ľ | į į | l i | 1 | 1 |
| 1 | | Ĭ. | I. | ı | 1 | í. | 1 | П | 1 | 1 | I | Í | 1 | 11. | Ţ | 1 | 1 | 1 | 1 | 11 | 1 | Ī | I . | I | 1 |
| 1 | Resid. Cl2 Free | 1 | 1 | 1 | 1 | I | 1 | n. | ¥. | 1 | 1 | £ | 1 | 11 | I | 1 | 1 | ı | 1 | 11 | 1 | 1 | 4 | ı | 1 |
| 1 | Resid. Cl2 Comb. | 4 | 1 | 1 | 1 | 1 | 1 . | D . | 1 | i . | 1 | ì | 1 | 11 | ı | i. | 1. | 1 | 4 | 11 | 1 | 1 | 1 | 1 | 1 |
| 1 | Resid. Cl2 Total | 1 0.27 | 0.22 | 1 0.24 | 1 0.82 | 1 0.60 | 0.76 | 0.31 | 0.14 | 1 0.26 | 1 0.73 | 0.59 | 1 0.66 | 11 0.32 | 0.12 | 1 0.20 | 1 0.74 | 0.58 | 1 0.66 | Ш | ľ | 1 | 1 | l . | 1 |
| 1 | | 1 | 1 | 1 | . 1 | 1 | 1 | 11 | 1 | 1 | 1 | | 1 | 11 | - | - | 1 | - | 1 | 11 | 1 | | | 1 | 1 |
| N I | C12 Demand | 1 | I . | 1 | 1 | 1 | 1 | H. | 1 | 4 | 1 | 1 | 4 | 11 | 1 | 1 | 1 | 4 | t | LL. | 1 | 1 | 1 | I- | J |
| 1 | Cl2 Dosage | 1 0.71 | 0.50 | 1 0.63 | 1 0.68 | 10.46 | 1 0.54 | 11 0.67 | 1 0.53 | 1 0.61 | 1 0.65 | 0.46 | 1 0.52 | 3.10 | 1 2.20 | 1 2.63 | 1 1.10 | 1 0.72 | 1 0.83 | 11 | Ī. | 1 | T . | I | 1 |
| ı | | 1 | I | ì | 1 | 1 | 1 | 11 | 1 | t | 1 | Ě | 1 | 11 | j. | 1 | ï | 1 | 1 | H | Ť | i. | f | F | 1 |
| 1 | Ammonia | 1 | ł | 1 | 1 | 1 | 1 | 3.1 | 1 | 1 | L | Ţ | 1 | 11 | T. | 1 | 1 | 1 | 1 | 11 | Ŀ | 1 | E - / | T. | 1 |
| 1 | | 1 | I . | I | 1 | 1 | I | 11 | 1 | 1 | 1 | Ţ | L | 11 | I | 1 | 1 | .1 | 1 | 1.1 | 1 | 1 | l. | 1 | Ĺ |
| 1 | SO2 | 1 | Î | 1 | l. | 1 | J | H | 1 | 1 | 1 | I. | F | 11 | Î | ı | 1 | 1 | 1 | 11 | I. | 1 | t | 1 | ł |
| 1 | | i | F | 1 | ı | 1 | 1 | 1.1 | T | 1. | £ | 1 | 10 | 11 | 1 | 1 | .E | 1 | 1 | 11 | i | 1 3 | f : | 1 | 4 |
| 1 | Resid. Cl2 Free | 1 | Į. | t | I | 1 | 1 | 1.1 | I | I | 1 | ľ | 1 | (I | I | L | 1 | Ī | ı | 14. | i, | 1 | ſ | 1 | 1 |
| 1 | Resid. Cl2 Comb. | 1 | I | ï | 1 | 1 | Ī | 11 | L | 1 | 1 | İ | 1 | 11 | Í | Ţ | 1 | 1 | 1 | 11 | L | 1 | 1 | Ĭ- | 1 |
| 1 | Resid. Cl2 Total | 1 0.27 | 1 0.20 | 1 0.24 | 0.85 | 1 0.62 | 0.76 | 11 0.31 | 1 0.27 | 1 0.29 | 1 0.79 | 1 0.58 | 1 0.67 | 11 0.27 | 1 0.16 | 1 0.22 | 1 0.75 | 1 0.60 | 1 0.66 | 11 | i. | 1 | i i | 1 | 1 |

TABLE 3.0: DISINFECTION SUMMARY

| | | I | | 19 | 86 | | | II. II | | 196 | | | | 1) | | 198 | | | | II II | | 198 | /3 | المحادث عرداد | |
|------|------------------|--------|-----------|--------|----------------|----------|--------|-----------|----------|----------|--------|----------|--------|---------|--------|--------|--------|------------------|--------|----------|---------|--------|--------|---------------|-------|
| | | I PRE- | -CHLORINA | ATION | | -CHLORI | NATION | II PRE- | CHLORINA | | POST | -CHLORIN | | II PRE- | | TION | POST | -CHLORIN | MATION | PRE-C | HLORINA | TION | POST-0 | CHLORIN | ATION |
| | | MAX. | MIN. | J AVG. | | | AVG. | II MAX. | | AVG. | MAX. | MIN. | AVG. | | MIN. | AVG. | MAX. | MIN. | AVG. | II MAX. | MIN. | I AVG. | MAX. | MIN. | AVG |
| JL I | C12 Demand | 1 | 1 | 1 | 1 | I semana | 4 | 11 | i. | i mesara | i. | i | 1 | 11 | i | 1 | i | i | i | 11 | i | 1 | i | Ĺ | į. |
| | C12 Dosage | 0.72 | 1 0.50 | 0.59 | 1 0.66 | 1 0.38 | 1 0.52 | 11 0.70 | 0.52 | 1 0.61 | 1 0.61 | 0.48 | 0.53 | 11 4.30 | 1 2.40 | 1 2.97 | 1 1.40 | 1 0.74 | 1 0.94 | 11 | Ĭ | I | i i | t | Ī |
| - 4 | | Ï | 1 | j- | Ē | Ī | 1 | LI. | ì | i | T | Ĭ. | 1 | 11 | ī | t | 1 | I | 1 | 11 | f | E . | 1 3 | 1 | 1 |
| j | Ammonia | ï | 1 | i | 1 | 1 | 1 | 11 | I. | Į. | 1 | £ | ī. | 11 | 1 | 1 | 1 | L. | 1 | 11 | l | I . | Ĺ | Ĺ |) |
| - 1 | K | E | 1 | II. | 4E | 11. | 1 | 11 | Ĭ. | į. | 1 | ı | 1 | 1.1 | 1 | į | 1 | 1 | 1 | 11 | 1 | 1 | ŀ | r · | T. |
| 1 | 502 | 1 | 1 | ĵ | T. | L | J. | 11 | I. | 1 | 1 | í | Ĩ | 11 | 1 | I- | 1 | I . | 1 | H | l . | ı | i i | ı | 4 |
| - | | Ĭ. | 1 | i | 1 | T | 1 | 11 | 1 | 1 | 1 | í . | ı | 11 | 1 | L | 1 | i. | 1 | 11 | 1 | L | į į | L | T. |
| ı | Resid. Cl2 Free | 1 | -E | 1 | I. | 11- | 1 | H | D. | 1 | 1 | 1 | į. | 11 | j. | 1 | 1 | I | 1 | 11 | 1 | Į. | () | r . | 1 |
| 1 | Resid. Cl2 Comb. | E | 1 | A . | t. | Ī | 1. | 11 | I, | 1 | 1 | 1 | 1 | 11 | 1 | 1 | 1 | 1- | 1 | 11 | 1 | I . | l- | 1 | Ł |
| 1 | Resid. Cl2 Total | 1 0.27 | 0.21 | 1 0.23 | 0.89 | 0.55 | 1 0.77 | 11 0.32 | 0.27 | 1 0.29 | 1 0.86 | 0.53 | 0.72 | 11 0.37 | 0.15 | 0.26 | 0.75 | 1 0.58 | 0.67 | 11 | ı | 1 | la . | A | L |
| - 1 | | 1 | - 1 | 1 | - | 1 | | 11 | t | 1 | 1 | I | | 11 | 1 | 1 | 1 | 1 | 1 | 11 | | i | 1 | l | 1 |
| JG [| Cl2 Demand | 3 | L | 1 | E | 1 | 120 | 11 | 1 | T | 1 | 1 | 1 | 11 | 1 | 1 | 1 | ī | ŗ | 11 | I | 1 | ł | 1 | 1 |
| 1 | Cl2 Dosage | 1 | ľ | J | I | Ĺ | 1 | 0.71 | 1 0.56 | 0.64 | 1 0.63 | 1 0.51 | 0.57 | 11 4.70 | 1 2.10 | 1 3.04 | 1 1.50 | 1 0.68 | 0.98 | 11 4.30 | 2.10 | 2.92 | 1.20 | 0.70 | 0. |
| I | | 1 | Ĺ | 1 | F | 1 | f | H | E | 1 | 1. | 1 | 1 | 1.1 | 1 | I | 1 | 1 | 1 | 11 | 1 | 4 | T | 1 | 1 |
| ì | Ammonia | t | 1 | 1 | 1 | 1 | 4 | 11 | 1 | 1 | 1 | 1 | | 11 | I. | I | 1 | 1 | 1 | 11 | ī |) | I | 1 | T |
| 1 | | 1. | l | 1 | L | Ĺ | 1 | 11 | T. | 1 | 1 | 1 | Î | H | 1 | 1 | 1 | 1 | τ | 11 | T. | 1 | 1. | 1 | 1 |
| 1 | SO2 | L | l | 1 | Î. | 1 | ī | L | E | 1 | 1 | 1 | - | 11 | -1 | 1 | 1 | 1 | £ | 11 | A. | 1 | į. | 1 | 1 |
| Ì | | Ť. | 1 | 1 | :10 | 1. | 1 | 11 | 1 | 1 | I | 1 | I | 11 | 1 | 1 | 1 | 1 | Ţ | 1.1 | 1 | 1 | 1 | 1 | ı |
| 1 | Resid. Cl2 Free | 1 | 1 | 1 | l ₀ | 1 | 1 | 11 | 1 | 1 | 1 | 1 | 100 | LI. | 1 | 1 | 1 | 1 | 1 | 11 | ı | 1 | 1 | 1 | F |
| ı | Resid. Cl2 Comb. | I | Ĺ | 3 | L | 1 | 1 | 11 | E. | 1 | L | 1 | ι | tt i | 1 | 1 | 1 | 1 | I | 11 | ř. | 1 | ı | t. | ľ |
| 1 | Resid. Cl2 Total | 1 | 1 | 4" | E | 1 | 1 | 11 0.30 | 1 0.26 | 0.28 | 0.85 | 0.60 | 1 0.77 | 0.49 | 0.19 | 1 0.30 | 0.75 | 1 0.50 | 0.66 | 0.21 | 0.14 | 0.17 | 0.74 | 0.56 | 0.0 |
| i | | 1 | 1 | 1 | . | . 1 | 1 | 11 | Ī | 1 | 1 | 1 | | 11 | 1 | 1 | 1 | 1 | J | 11 | | - | | | |
| EP | C12 Demand | ı | 1 | Ţ | E | ĵ | | 11 | I. | ı | 1 | 1 | 1 | TI | 1 | II. | l . | 1 | 1 | 11 | 1 | 1 | E | 1 | 1 |
| 1 | Cl2 Dosage | I. | l | 1 | F . | 1 | 1 | 11 0.74 | 0.55 | 0.61 | 1 0.60 | 1 0.49 | 0.53 | 4.84 | 1 2.28 | 1 2.79 | 1 1.33 | 0.70 | 1 0.88 | 11 3.50 | 2.00 | 2.65 | 1.10 | 0.68 | 0.1 |
| 1 | | E | ľ. | 3 | Is. | 1 | | 11 | 1 | Î | 1 | I | ı | 11 | 1 | 1 | 3 | £ | 1 | 11 | .1 | 1 | 1 | 4. | .1 |
| 1 | Ammonia | t . | ľ | Ī | I. | 1 | | 1.1 | L | 1 | t | ţ | ı | 11 | 1 | 1 | 1 | ľ | Ĭ | 11 | 1 | 1 | 1 | 1 | 1 |
| 1 | | 1 | ľ | Ţ | 1 | 1 | | П | ľ | 1 | 1 | 1. | I. | 11 | 1 | Ţ | 1 | t. | 1 | 11 | 1 | 1 | 1 | L | I. |
| 1 | SO2 | f | 1 | Í | E | 1 | -1 | 11 | T. | 1 | 1 | 1 | t. | 11 | 3 | 1 | 3 | I | 1 | (I | 1 | 1 | 1 | L | 1 |
| -1 | | I. | Ţ |). | b) | 1 | 50 | 11 | T | L | I. | I | 1 | 11 | 1 | 1 | 4 | 1 | 1 | TI | ì | Ţ | į | 1 | 1 |
| 1 | Resid. Cl2 Free | L | ľ | .1 | -C | 1 | 377 | 1.1 | 1 | .1 | 1 | 1 | 1 | 11 | 1 | ı | 1 | T | ı | 11 | I | 1 | T | T | 1 |
| Ī | Resid. Cl2 Comb. | 1 | 1 | Ţ | T | Ĭ- | | 1.4 | 1 | 1 | 1 | 1 | 1 | H | 4 | IF | ď | I and the second | 1 | 11 . | I | 4 | 1 | I. | 1 |
| 1 | Resid. Cl2 Total | 1: | T. | d | 1 | 4 | 1 | 0.31 | 1 0.26 | 0.28 | 0.85 | 0.60 | 1 0.77 | 11 0.42 | 1 0.23 | 1 0.30 | 0.94 | 1 0.59 | 1 0.73 | 11 0.17 | 0.01 | 0.15 | 0.72 | 0.58 | 0, |

TABLE 3.0: DISINFECTION SUMMARY

| | | 1 | | | 986 | Tarana an an | | 11 | | 196 | | | | 11 | | 19 | | | | () () | | 196 | 33 | | |
|-------|------------------|--------|---------|--------|-----------------|--------------------|--------|---------|----------|--------|--------|----------|--------|--------------------|---------|--------|----------|----------|--------|----------|---------|------|--------|---------|--------|
| | | W | CHLORIN | ATION | POS | T-CHLOR | MOLTAN | II PRE- | CHLORINA | TION | POST- | -CHLORIN | ATION | PRE- | CHLORIN | TION | POST | -CHLORIN | | II PRE-C | HIORINA | TION | POST- | CHLORIN | NATION |
| | | | (MIN. | | m To the second | manufacture of the | I AVG. | II | | | | | | P. B. W. SERVERSON | KIN. | | | | | L. | MIN. | AVG. |) MAX. | MIN. | (AVG |
| i ing | C12 Demand | i | 1 | 1 | 1 | . j | 1 | 11 | 1 | (| 1 | 1 | 1 | ji | 1 | i | 1 | ĺ | 1 | 11 | 1 | ľ | 1 | 1 | ı |
| 1 | Cl2 Dosage | 1 0.00 | 1 0.00 | 0.00 | Ť | i | î. | 11 0.73 | 1 0.47 | 0.61 | 0.63 | 0.46 | 1 0.52 | 11 3.53 | 1 1.52 | 1 2.16 | 1 0.93 | 0.48 | 1 0.67 | 11 4.40 | 1.00 | 2.16 | 1.40 | 0.34 | 0.6 |
| i | | 1 | 1 | 1 | 1 | 3 | 1 | H | 1 | E | ı | ı | 1 | Ĥ | 1. | 1 | 1 | T | Ì | 1.1 | 1 | 1 | Ī | 1 | ī |
| 4 | Ammonia | 1 | 1 | ı | ī | 1 | ı | n | ĭ | í | T. | 1 | 1 | 11 | j | 1 | î | ī | í | 11 | 1 | 1 | ı | 1 | 1 |
| 1 | | 1 | 1 | 1 | ľ | 1 | 1 | 11 | ì | ŧ | 1 | ı | 1 | н | j. | 1 | 1 | T | 1 | 11 | 1 | Ji . | Ł. | 1 | 1 |
| 1 | SO2 | 1 | 1 | 1 | 1 | 1 | D- | H | ı | ı | 1 | 1 | ı | 11 | 1 | 1 | 1 | I | Í | 11 | ŧ | 1 | I | 1 | |
| 5 | | 1 | J | 1 | 1 | 1 | 1 | H | i | ľ | 1. | i. | 1 | 11 | I . | 1 | 1 | L | I | 11 | ī | 1 | į. | 1 | 1 |
| 1 | Resid. Cl2 Free | 1 0.00 | 1 0.00 | 1 0.00 | 1 0.00 | 1 0.00 | 1 0.00 | H | ī | t | Î. | ı | 1 | A f | I | 1 | 1 | 1 | 1 | 11 | F | 1 | à: | 1 | 1 |
| 1 | Resid. Cl2 Comb. | 1 | 1 | 1 | 1 | 1 | 1 | 11 | ı | f. | ı | 1 | l. | 11 | 1 | i. | 1 | 1 | 1 | 1.1 | i | 1 | I | 1 | 1 |
| 1 | Resid. Cl2 Total | 1 | 1 | 1 | i. | 1 | 1 | 11 0.31 | 0.23 | (0.28 | 0.90 | 0.61 | 1 0.77 | 11 0.38 | 1 0.21 | 1 0.30 | 1 0.85 | 1 0.60 | 0.76 | 11 0.25 | 0.06 | 0.15 | 0.80 | 0.50 | 0.6 |
| 1 | | 1 | 1 | 1 | · [| | 1 | 11 | I | 1 | 1 | 1 | 1 | 11 | 1 | 1 | 1 | 1 | 1 | H1 | | | | | |
| 1 | C12 Demand | ï | 1 | 1 | 1 | 1 | 1 | н | T | E | L | 1 | F | 11 . | | 1 | j. | 1 | Ĵ | ti . | í | 1 | ı | 1 | 1 |
| 1 | Cl2 Dosage | 1 0.00 | 1 0.00 | 1 0.00 | · i. | Ī | 1 | 11 0.87 | 0.49 | 0.64 | 1 0.74 | 0.45 | 0.54 | 11 2.46 | 1 1.21 | 1 1.68 | 0.69 | 1 0.35 | 1 0.50 | 11 2.00 | 1.20 | 1.55 | 0.67 | 0.35 | 0.4 |
| E | | j. | 1 | 1 | ì | 1 | j | 11 | i | 1 | 1 | ı | T | 11 | 1 | -1 | t | ı | 1 | 11 | F | .1 | t | 1- | 1 |
| 1 | Ammonia | 1 | 1 | 1 | 1 | 1 | 1 | 11 | 1 | T. | J. | 1 | ſ | ti . | 1 | | <u>I</u> | t. | 1 | 11 | ĺ | 1 | ı | 1 | 1 |
| 1 | | 1 | 1 | 1 | 1 | 1 | 1 | FL | i. | 1 | 1 | I | 1 | 11 | 1 | 1 | 1 | 1 | 1 | 11 | Ĭ - | 1 | Ì | L | 1 |
| q. | SO2 | 1 | 1 | 1 | Ī | 1 | 1 | 11 | ī | i. | 1 | 1 | i. | 11 | 1 | 1 | 1 | 1 | 1 | 11 | ŀ | I. | ¥. | 1 | 1 |
| 1 | | 1 | 1 | 1 | Ĭ. | 1 | lk: | H | 1 | 1 | 1 | 1 | ł | 11 | 1 | E | 1 | t. | A. | 11 | 1 | 1 | t | 4. | 1 |
| Ĩ | Resid, Cl2 Free | 1 0.00 | 1 0.00 | 1 0.00 | 1 0.00 | 1 0.00 | 1 0.00 | H | 4 | | 1 | t | 1 | 11 | 1 | .1 | j | 1 | 1 | 11 | l . | 1 | I . | 1 | 1 |
| Ţ | Resid. Cl2 Comb. | | 1 | 1 | ì | ī | 1 | 11 | 1 | t | Ţ . | ı | 1 | 11 | 1 | l. | 1 | 1 | 1 | 11 | T | 1 | 1 | 3 | 1 |
| J | Resid. Cl2 Total | ı | 1 | 1 | T | 1 | T | 11 0.30 | 0.26 | 0.28 | 0.90 | 1 0.60 | 1 0.77 | 11 0.37 | 1 0.15 | 1 0.25 | 0.85 | 1 0.55 | 0.71 | 0.21 | 0.12 | 0.15 | 0.71 | 0.54 | 0.6 |
| 1 | ****** | 1 | 1 | 1 | 1 | 1 | 1 | 11 | 1 | 1 | 1 | 1 | J | 11 | 1 | 1 | 1 | f | 1 | (| | | | | - |
| T | Cl2 Demand | L | ı | 1 | ì | 1 | 1 | 11 | I | ı | 1 | 1 | 1 | 11 | 1 | i | 1 | • | 1 | (1 | 1 | I | 1 | I | 1 |
| 1 | C12 Dosage | 1 0.00 | 1 0.00 | 1 0.00 | 1 | 1 | 1 | 11 0.79 | 0.56 | 0.64 | 0.66 | 0.44 | 0.55 | 11 2.56 | 1 0.88 | 1 1.36 | 0.52 | 1 0.29 | 1 0.39 | 1 2.40 | 0.70 | 1.43 | 0.69 | 0.20 | 0.4 |
| 1 | | 1 | 1 | 1 | T | 1 | 1 | D. | ŧ | 1 | I | T | 1 | 11 | 1 | k | 1 | 1 | 1 | U | ſ | 1 | I | 1 | 1 |
| 1 | Ammonia | 1 | 1 | 1 | ı | 1 | 1 | 1.1 | 1 | I. | I | 1 | 1 | 11 | 1 | 1 | 1 | t | 1 | 11 | į | 1 | Ţ | 1 | 1 |
| 1 | | Ī | 1 | 1 | 1 | 1 | 1 | 11 | i | 1 | 1 | i . | T | 14 | T. | 1 | 1 | t | L | t I | t | 1 | i | ı | 1 |
| 1 | 502 | i. | t | 1 | 1 | 1 | II. | H | 1 | 1 | 1 | f | l | H | 1 | 1 | 1 | 1 | J. | 11 | ſ | T | I. | 1. | 1 |
| 1 | | 1 | 1 | 1 | t | J. | 1 | U | ı | L | 1 | L | 1 | 14 | 1 | L | 1 | 1 | 1 | 11 | J | J | Ī | ı | 1 |
| T | Resid. Cl2 Free | 1 0.00 | 1 0.00 | 1 0.00 | 0.00 | 1 0.00 | 1 0.00 | H | 1 | 1 | 1 | I | Ţ | 11 | 1 | L | 1 | ı | F | 11 | ſ | 1 | 1 | 1 | 1 |
| 1 | Resid. Cl2 Comb. | Ī | 1 | i | 1 | 1 | T. | H | ı | 1. | Ŀ | 1 | Ī | H | 1 | 1 | 1 | Ĺ | 1 | 1.1 | ı | 1 | 1 | 1 | 1 |
| 1 | Resid. Cl2 Total | 1 | 1 | t | 1 | 1 | 1 | 11 0.30 | 1 0.22 | 0.28 | 0.78 | 0.72 | 1 0.76 | 11 0.19 | 1 0.14 | 0.16 | 1 0.77 | 1 0.56 | 1 0.66 | 11 0.20 | 0.14 | 0.16 | 0.74 | 0.50 | 0.6 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (AUG 1983)

| 1 | | | | PRE-C | HLC | RINATIO | N | | JUL PAZVI | | H | | - Na <u>-</u> -SNa- | | POST-CI | HORINA: | rion | l | | | 1 | |
|------|------|-----|------|-------|-------|---------|---------|-------|-----------|-------|-----|------|---------------------|------|----------|---------|------|-------|------------|-------|-----|-----|
| DATE | | 212 | | [| 1 | | 120,000 | SIDUA | L C] | L2 | ii | | :12 | | l NH3 | 1 803 | | RE | SIDUAL Cl2 | ! | DA | ATE |
| 1 | Dem. | | Dos. | | 1 | so2 | Free | Comb | - 1 | Total | ii | Dem. | i | Dos. | V | 1 302 | | | Comb. | Total | . | |
| 1 1 | | 1 | 4.30 | I | 1 | | | 1 | | 0.16 | | | | 1.20 | | l | | I | l | 0.65 | Ì | 1 |
| 2 1 | | | 3.40 | i | 1 | | 1 | Ü | 1 | 0.20 | 1.1 | | 1 | 1.10 | l. | ı | j | l | 1 | 0.66 | 75 | 2 |
| 3 1 | | | 2.90 | î | 1 | | 1 | 1 | 1 | 0.21 | 1.1 | | 1 | 0.93 | | ĵ. | 1 | l | 1 | 0.66 | 1 | 3 |
| 4 1 | | | 2.70 | i | î | | ì | Ì | 1 | 0.19 | 1.1 | | 1 | 0.82 | ľ | 1 | 1 | ľ | 1 | 0.65 | 1 | 4 |
| 5 1 | | | 2.50 | i | į. | | i | Ĭ. | 1 | 0.19 | 11 | | 1 | 0.83 | Į, | 1 | 1 | ĺ | 1 | 0.64 | 1 | 5 |
| 6 1 | | | 3.00 | i | 1 | | ı | 1 | 1 | 0.17 | 1 E | | ī | 0.96 | ĺ | 1 | 1 | l | I : | 0.64 | 1 | • |
| 7 1 | | | 3.50 | i | Ī | | 1 | Ì, | Ī | 0.15 | 11 | | 1 | 1.10 | ľ | 1 | 1 | [| 1 | 0.65 | 1/2 | 1 |
| 8 1 | | 100 | 2.90 | 1 | Ť | | Ì | ï | 1 | 0.18 | 1.1 | | 1 | 0.99 | l | 1 | 1 | l | 1 | 0.65 | | 1 |
| 9 1 | | 100 | 3.80 | i | ĺ | | 1 | 1 | - 1 | 0.17 | 1.1 | | 1 | 1.10 | ĺ | 1 | | 1 | 1 | 0.65 | 1 | - |
| 10 i | | | 3.10 | 1 | 1 | | ì | ì | Ĺ | 0.18 | 1.1 | | 1 | 1.00 | 1 | 1 | | l | 1 | 0.65 | 1 | 1 |
| 11 | | | 3.50 | i | ì | | Ĺ | î | - 1 | 0.19 | 1.1 | | 1 | 1.10 | ľ | 1 | | 1 | 1 | 0.65 | 1 | 1 |
| 12 | | 100 | 3.30 | ì | i | | Î. | 1 | 1 | 0.16 | 1.1 | | 1 | 1.00 | 1 | 1 | | 1 | Í | 0.65 | 1 | 1: |
| 13 | | | 3.40 | i | 1 | | ī | Ĩ | î | 0.17 | 11 | | Î | 1.20 | 1 | Ĩ | | | 1 | 0.64 | | 1. |
| 14 | | | 3.80 | î | Ì | | Ì | I | - 1 - | 0.18 | 1 1 | | 1 | 1.10 | 1 | 1 | | 1 | 1 | 0.65 | 100 | 1 |
| 15 | | 1 | 3.60 | 1 | 1 | | I | l | 1 | 0.17 | 1.1 | | 1 | 1.10 | | 1 | | l | l . | 0.64 | | 1 |
| 16 | | 1 | 2.90 | ì | 1 | | 1 | I | 1 | 0.21 | 1.1 | | 1 | 0.94 | 1 | 1 | | l | 1 | 0.65 | | 1 |
| 17 | | 1 | 2.50 | 1 | 1 | | 1 | 1 | 1 | 0.17 | 1.1 | | 1 | 0.79 | I | 1 | | I. | 1 | 0.66 | 130 | 1 |
| 18 | | 1 | 2.20 | 1 | Ĭ. | | 1 | 1 | 1 | 0.15 | 1.1 | | 1 | 0.80 | l. | 1 | | l | 1 | 0.67 | | 1 |
| 19 I | | î | 2.40 | Ī | - 1 | | 1 | 1 . | 1 | .0.15 | 1 1 | | 1 | 0.70 | l. | 1 | | l, | 1 | 0.66 | | 1 |
| 20 | | Ì | 2.30 | Î | - 1 | | 1 | 1 | 1 | 0.15 | 1 1 | | 1 | 0.70 | l | T | | ĺ | L | 0.66 | | 2 |
| 21 | | i | 2.10 | 1 | 1 | | 1 | 1 | - 1 | 0.15 | 1.1 | | 1 | 0.76 | Į. | Î | | 1 | 1 | 0.67 | | 2 |
| 22 | | 1 | 2.50 | Ī | 1 | | 1 | 1 | 1 | 0.17 | 1.1 | | 1, | 0.76 | 1 | ľ | | l . | Į. | 0.65 | E. | 2 |
| 23 | | Î | 2.70 | Ì | 1 | | 1 | 1 | 1 | 0.16 | 1.1 | | 1 | 0.82 | 1 | ı | | I | 1 | 0.66 | | 2. |
| 24 1 | | ĺ | 2.60 | 1 | Ĺ | | l | 1. | 1 | 0.16 | 1.1 | | Ī | 0.83 | Ī. | Í | | 1 | 1 | 0.65 | T | 2 |
| 25 [| | i | 2.60 | Î | i i | | Î | 1 | 1 | 0.17 | 1 1 | | I | 0.80 | 1 | 1 | | 1 | 1 | 0.66 | 1 | 2 |
| 26 | | i | 2.60 | l | ĺ | | Î | 1 | 1 | 0.16 | 1.1 | | t. | 0.76 | l | 1 | | l . | 1 | 0.66 | 1 | 2 |
| 27 | | i | 2.70 | į. | ì | | 1 | 1 | 1 | 0.15 | 11 | | 1 | 0.89 | 1 | f | | ĺ | 1 | 0.65 | 1 | 2 |
| 28 | | ï | 2.80 | i | i | | i | î | Ī | 0.14 | 11 | | 1 | 0.82 | ĺ | 1 | | 1 | 1 | 0.65 | 1 | 2 |
| 29 | | ì | 2.70 | 1 | Í | | L | i | i | 0.15 | H | | 1 | 0.85 | 1 | 1 | | 1 | I | 0.65 | 1 | 2 |
| 30 | | Ť | 2.50 | i | i | | j. | 1 | i | 0.16 | 11 | | 1 | 0.82 | ĺ | i | | 1 | Î | 0.66 | 1 | 3 |
| 31 | | 1 | 2.70 | i | 1 | | Ť | i di | i | 0.15 | 100 | | Ĭ | 0.88 | Î | 1 | | 1 | Ĭ. | 0.65 | Ĭ. | 3 |

TABLE 3.1: DISINFECTION PROFILE (SEP 1983)

| 1 | | | | PRE-C | CHLO | RINATIO | N | . Indicated | | | | | | | POST-C | HLOR | INATIO | N | | | 1 | |
|-------------|------|---------|------|--------------|-------|---------|-------------|-------------|------|------------|---------|-----|-----|------|--------------------|-------|--------|-------|------------|-------|--------------|------|
| I DATE I | | C12 | | 1 | ! | | Acres Acres | SIDUAL | C1 | 12 | ii | | c12 | | | l | S02 | I RE | SIDUAL C12 | |) - | DATE |
| 1 | Dem. | | Dos. | A CONTRACTOR | J | SO2 | Free | | | | 20.0 | | | | Man Harrendon Con- | Ï | 302 | 0.00 | [Comb. | Total | i | |
| 1 I | | I | 2.60 | I | 1 | | 1 | 1 | | 0.16 | 11 | | ì | 0.79 | | [| | 1 | I I | 0.66 | i | 1 |
| 2 1 | | | 2.50 | | 1 | | ì | 1 | 1 | 0.15 | 11 | | 1 | 0.75 | 1 | T | | 1 | į j | 0.65 | 1 | 2 |
| 3 1 | | 123 | 2.30 | i | Í | | ì | î | 1 | 0.14 | 1.1 | | 1 | 0.71 | Ť. | 1 | | L | £ 1 | 0.65 | 1 | 3 |
| 4 1 | | 100 | 2.40 | ì | 1 | | Î | 1 | 1 | 0.15 | 1.1 | | Ī | 0.73 | 1 | Ĭ | | 1 | 1 1 | 0.65 | 1 | 4 |
| 5 1 | | | 2.70 | i | i | | ì | i | 1 | 0.14 | 1.1 | | 1 | 0.81 | i . | 1 | | 1 | 1 1 | 0.65 | 1 | 5 |
| 6 1 | | - | 2.30 | ì | | | ì | ì | 1 | 0.14 | t I | | f | 0.82 | ı | 1 | | 1 | 1 1 | 0.63 | 1 | e |
| 7 1 | | 10 | 2.70 | ì | i | | ì | 1 | i | 0.14 | 11 | | Ī | 0.88 | ĺ | 1 | | Ĭ | Ī I | 0.65 | 1 | • |
| 8 1 | | 100 | 2.70 | i | Ť | | Î | i | i | | 11 | 21 | ì | 0.86 | 1 | 1 | | 1 | 1 1 | 0.66 | I | |
| 9 1 | | | 2,60 | i | ř | | ì | i | ì | THE PERSON | Ťi | 4.0 | 1 | 0.79 | 1 | 1 | | 1 | 1 1 | 0.66 | 1 | |
| 10 | | ÷ | 2.40 | ì | i | | i | i | i | 0.16 | Ťi | | ĩ | 0.74 | Ì | 1 | | Ī | 1 1 | 0.66 | 1 | 10 |
| 11 | 146 | Ť | 2.70 | i | i | | Ŷ | i | i | 0.14 | îì | | -1 | 0.90 | 1 | 1 | | ì | i i | 0.65 | 1 | 1 |
| 12 1 | | 4 | 2.70 | i | i | | ř. | î | ì | 0.15 | 11 | | Ĺ | 0.86 | i i | 1 | | I | 1 1 | 0.65 | 1 | 13 |
| 13 | | ŀ | 2.60 | ì | i | | Ť. | i | i | | ŤΪ | | Ĺ | 0.81 | ı | ĺ | | Ì | i i | 0.65 | 1 | 13 |
| 14 | | i | 2.60 | ì | ï | | Ť | ì | i | 0.16 | ii | | ì | 0.83 | î | 1 | | Ī | 1 | 0.66 | 1 | 1 |
| 15 1 | | 1 | 3.00 | ì | ì | | Ť | Ť | i | 0.17 | îî | | 1 | 0.73 | 1 | T | | 1 | t i | 0.67 | 1 | 15 |
| 16 | | Ť | 2.20 | i | Ť | | i | i | i | 0.14 | ĨΪ | | i | 0.72 | ì | ì | | 1 | 1 1 | 0.64 | 1 | 1 |
| 17 | | 1 | 3.10 | ì | 1 | | ì | 1 | i | 0.14 | ΪΪ | | î | 1.10 | ì | i | | 1 | i i | 0.65 | ì | 1 |
| 18 | | | 3.50 | î | î | | 7 | i | î | 0.13 | îi | | 1 | 1.00 | Ì | 1 | | ı | i i | 0.67 | 1 | 18 |
| 19 | | į | 2.90 | i i | Ţ. | | * | ř | i | 0.16 | (0) (0) | | î | 0.92 | | 1 | ÷ | i | î î | 0.66 | 7 | 19 |
| 20 | | 1 | 2.60 | X T | · · | | 7 | Ť | i | 0.16 | 71 | | å | 0.83 | i | i | | Î | i i | 0.65 | ì | 20 |
| 21 1 | | - 2 | 2.70 | Ť | | | ė. | ì | i | 0.14 | 11 | | Ŷ | 0.86 | 1 | ī | | i | i i | 0.65 | î | 2 |
| 22 | | i | 3.00 | i | ì | | | í | i | 0.01 | ΪÌ | | 1 | 0.91 | Ï | Ť | | ľ | i i | 0.66 | 1.00 | 22 |
| 23 | | 1 | 2.30 | i | ī | | ï | Ť | f | 0.16 | (a) ==0 | | 18 | 0.75 | Í | Ť | | | î i | 0.66 | | 2: |
| 24 1 | | 1 | 3.00 | i | ì | | ì | Î | ì | 0.14 | ii | | - î | 1.00 | ì | i | | i | ī i | 0.65 | 1.5 | 2 |
| 25 1 | | 1 | 3.20 | 1 | | | 1 | ì | i | | ii | | i | 0.87 | i | í | | ř | i i | 0.66 | | 2 |
| 26 1 | | 1 | 2.60 | į. | i | | ĺ | ì | i | 0.17 | | | i | 0.87 | Ĺ | î | | i | 1 1 | 0.66 | 780 | 2 |
| 27 1 | | 1 | 2.20 | i. | 1 | | 18 | 4 | 1 | 0.15 | 250 87 | | Ť | 0.68 | ì | i | | ì | i | 0.66 | 15 | 2 |
| 28 1 | | 1 | 2.80 | į. | 1 | | | ì | 100 | 0.14 | 8 | | 1 | 0.77 | i | i | | î | 1 1 | 0.66 | 7/5/01 | 21 |
| 29 1 | | 1 | 2.20 | | 1 | | í | Ť | ľ | 0.17 | 776 357 | | Ť | 0.75 | 1 | 1 | | i i | 1 1 | 0.66 | 100 | 2 |
| Marian M | | 1,00 | 2.50 | | 1 | | 1 | 4 | 1 | 0.16 | 1982 | | 100 | 0.74 | | î | | i | 1 1 | 0.68 | 230 | 3 |
| 30 | | ı | 2.30 | 1 | į | | 19 | i | | 0.10 | | | 1 | 0,11 | ï | ÷ | | i | 1 | 0.00 | ř | 3: |
| 31 | | - 1 | | 4 | J | | A. | 1 | 1 | | 1 1 | | 4 | | | 10 | | 4 | | | | - |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (OCT 1983)

| I | | | | PRE-CI | HLO | RINATIC | N | | | | | I | | | | POST-C | HLO | RINATIO | N _ | EDVAGUE (Exp Open | | | _ | | 1 | |
|---------------|------|-----|------|---------------|-----|---------|----|------|--------|----|-------|-----|--------|-----|------|-----------|-----|---------|-----|-------------------|-----|---------|----|-------|------|------|
| DATE | c | | | l | 1 | | 1 | | SIDUAL | c1 | .2 | 1 | | :12 | | NH3 | 1 | 603 | Ĺ | RE | si | DUAL C1 | 2 | | į i | DATE |
| 1 | Dem. | | | . 0-100001000 | 1 | s02 | | Free | | 1 | Total | | | | | NH3 | | | 1 | Free | Ī | Comb. | I | Total | į | |
| 1 I | | 1 | 2.10 | 1 | Ĩ | | 1 | | l | 1 | 0.15 | 1 | | 1 | 0.75 | [| 1 | | I | | 1 | | ı | 0.69 | 1 | 1 |
| 2 1 | | | 2.00 | l | 1 | | 1 | | T | 1 | 0.12 | I | | 1 | 0.55 | T | 1 | | 1 | | 1 | | 1 | 0.72 | 1 | 2 |
| 3 1 | | | 1.70 | ľ | 1 | | 1 | | 1 | 1 | 0.10 | T | | 1 | 0.55 | Ĺ | 1 | | 1 | | 1 | | 1 | 0.68 | 1 | 3 |
| 4 1 | | | 1.30 | 1 | ľ | | Ĺ | | i | Î. | 0.09 | 1 | 187 | 1 | 0.39 | T | 1 | | 1 | | 1 | | 1 | 0.72 | 1 | 4 |
| 5 I | | | 1.00 | Î | 1 | | 1 | | i | 1 | 0.06 | 1 | | 1 | 0.34 | 1 | 1 | | 1 | | II. | | J | 0.69 | 1 | 5 |
| 6 1 | | | 2.20 | Î | 1 | | 1 | | 1 | 1 | 0.08 | 1 | | 1 | 0.75 | Ĺ | 1 | | 1 | | 1 | | 1 | 0.69 | 1 | 6 |
| 7 1 | | i | 4.00 | Î | Ĩ | | ī | | ĺ | Ĩ | 0.12 | 1 | | İ | 1.20 | 1 | 1 | | Ĭ. | | 1 | | 1 | 0.69 | 1 | 7 |
| 8 1 | | i | 4.10 | i | i | | 1 | | i | ı | 0.14 | 1 | | T | 1.40 | T | 1 | | t | | 1 | | 1 | 0.67 | 1 | 1 |
| 9 1 | | i | 4.40 | Ĺ | Ť. | | i | | î | Ĺ | 0.14 | 1 | | 1 | 1.40 | 1 | 1 | | l | | 1 | | 1 | 0.67 | 1 | |
| 10 1 | | î | 3.50 | i | 4 | | 1 | | ì | Î | 0.18 | 1 | | 1 | 1.00 | 1 | 1 | | 1 | | i | | 1 | 0.70 | 1 | 1 |
| 11 | | î | 2.90 | ì | i | | i | | i | 1 | 0.17 | 1 | | i | 0.90 | | 1 | | 1 | | 1 | | 1 | 0.70 | 1 | 1 |
| 12 | | i | 2.60 | Î | i | | i | | Ť | Ĺ | 0.15 | L | 1 | 1 | 0.83 | ľ | 1 | | 1 | | 1 | | 1 | 0.70 | 1 | 1 |
| 13 | | i | 2.30 | i | i | | i | | î | Í | 0.16 | | Í | ı | 0.73 | Î | 1 | | Ĭ. | | 1 | | 1 | 0.69 | 1 | 1 |
| 14 | | ì | 2.20 | ĺ | i | | i | | i | î. | 0.15 | i | | i | 0.66 | ì | 1 | | 1 | | 1 | | 1 | 0.69 | 1 | 1 |
| 15 | | ì | 2.80 | î | i | | î | | ì | i | 0.17 | i. | i | i | 0.80 | Ì. | i | | 1 | | 1 | | 1 | 0.73 | i. | 1 |
| 16 | | ì | 2.50 | i | Ý | | É | | î | Ť | 0.24 | 1 | | ì | 0.79 | ř | ì | | ĺ | | ī | | 1 | 0.73 | 1 | 1 |
| 17 | | i | 1.70 | i | Ť | | î | | Î | î | 0.25 | Ť | | 1 | 0.57 | ì | ĺ | | 1 | | 1 | | 1 | 0.70 | 1 | 1 |
| 18 | | | 1.70 | Ž i | î | | i | | i | i | 0.20 | -44 | | i | 0.50 | Ė | i | | i | | 1 | | 1 | 0.66 | 1 | 1 |
| 19 | | | 1.50 | | Ť | | ì | | î | ï | 0.17 | i. | | î | 0.49 | î. | 1 | | i | | 1 | | 1 | 0.66 | 1 | 1 |
| 20 | | | 1.40 | i. | î | | i | | ì | î. | 0.14 | î | N . | i | 0.43 | ì | î | | 1 | | 1 | | T | 0.65 | 1 | 2 |
| 21 | | | 1.70 | 1 | i | | i | | i | î | 0.14 | i | | ì | 0.48 | ĵ | 1 | | i | | 1 | | ů. | 0.65 | 1 | 2 |
| 22 | | 2 | 1.40 | ì | î | | ì | | i | î | 0.15 | i | i I | î | 0.51 | ì | i | | 1 | | i | | i | 0.66 | į. | 2 |
| 23 | | | 1.70 | i I | ñ | | 1 | | i | ì | 0.13 | | • | i | 0.59 | i | i | | ì | | í | | i | 0.64 | 1 | 2 |
| 24 1 | | | 1.60 | 1 | î | | i | | î | i | 0.15 | - 6 | | i | 0.46 | î | i | * | î | | i | | 1 | 0.65 | | 2 |
| 25 1 | | 577 | 1.60 | | 1 | | 1 | | 1 | ì | 0.14 | -80 | | î | 0.53 | 1 | 1 | | í | | i | | i | 0.66 | | 2 |
| 26 | | | 1.90 | i I | i | | 1 | | | 1 | 0.15 | L. | e. | i | 0.51 | i | i | | ì | | ī | | i | 0.66 | 1979 | 2 |
| Land Land III | | | 1.60 | 1 | 1 | | 1 | | 1 | 1 | 0.14 | | | 1 | 0.51 | 1 | Î | | í | | ì | | i | 0.65 | 8 | 2 |
| 27 | | 151 | 1.90 | | ÷ | | 1 | | d. | î | 0.13 | i | | i | 0.54 | | Ť | | î | | i | | î | 0.67 | | 2 |
| 28 | | | | | 1 | | 1 | | 1 | f | 0.13 | 10 | l I | 1 | 0.64 | i | L | | ř | | i | | i | 0.65 | - | 2 |
| 29 | | | 1.80 | 1 | 1 | | 1 | | 1 | 1 | 0.13 | 1 | l I | 4 | 0.64 | r r | i i | | ì | | | | 1 | 0.65 | | 3 |
| 30 | | | 2.10 | l. | Ī | | Į. | | i i | ī | 0.11 | 1 | l I | ļ | 0.58 | | 1 | | 1 | | i | | i | 0.65 | | 3 |
| 31 | | 1 | 1.80 | | Į | | ı | | 4 | 1 | 0.13 | 1 | l_ | | 0.58 | 4 | | | 1 | | 1 | | 1 | 0.00 | 4 | _ |

TABLE 3.1: DISINFECTION PROFILE (NOV 1983)

| 1 | | | | PRE-C | HLO | RINATIO | N | | | | 11- | . موسوليان | | | POST-C | HLORINA | TION | | | | - 1 | |
|-----------|------|---------|-------|-------|-----|---------|---------|---------|----------|---------------------|---------|------------|----------|---|--------|------------|------|---------------|-------------|-------|-----------|-------|
| I DATE | | C12 | | 1 | l | 502 | I RI | ESIDUAL | C1: | 2 | ΪΪ | C1 | | | 1 | l l so2 | , | RI | ESIDUAL C12 | | į | DATE |
| i | Dem. | | Dos. | İ | 1 | | Free | Comb. | Ī | | 11 | Dem. | 1 | Dos. | Ì | 302 | | 100 | [Comb. | Total | Ì | |
| 1 i | | 1 | 2.00 | | 1 | | 1 | 1 | I | 0.16 | | | | 0.56 | | 1 | | : | 1 3 | 0.65 | - - | 1 |
| 2 1 | | | 1.50 | 1 | 1 | | Ĩ | ì | Î | 0.15 | 11 | | ĺ | 0.52 | ĺ | Ī | - 1 | | Ĺ | 0.65 | 1 | 2 |
| 3 1 | | Ť | 1.80 | | ı | | ĵ | 1 | 1 | 0.14 | 11 | | l | 0.55 | 1 | i | | | 1 | 0.64 | 1 | 3 |
| 4 1 | | | 1.60 | i . | Ī | | Ì | 1 | Ĺ | 0.16 | 1.1 | | ı | 0.53 | 1 | Ī | 1 | | 1 3 | 0.65 | 1 | 4 |
| 5 (| | | 1.80 | ī | Ĺ | | î | 1 | Ĺ | 0.16 | 11 | | ĺ | 0.60 | Î | Ĭ | | | i i | 0.65 | 1 | 5 |
| 6 1 | | | 1.90 | 1 | Ť | | Ť | Î | 1 | 0.16 | H | | 1 | 0.67 | Í | i | | | Ĩ. | 0.65 | Ĺ | 6 |
| 7 1 | | 3.0 | 1.90 | i | İ | | i | 1 | 1 | 0.21 | 11 | | 1 | 0.53 | 1 | 1 | i | 9 | 1 | 0.65 | 1 | 7 |
| 8 1 | | 9.00 | 1.40 | Î | 1 | | 1 | ī | 1 | 0.16 | 1.1 | | ĺ | 0.43 | j | î | i | | 1 | 0.67 | 1 | 8 |
| 9 1 | | 100 | 1.40 | î | Ť | | i | ì | i | 0.17 | ii | | ĺ | 0.44 | Ì | î | | | | 0.65 | ĺ | 9 |
| 10 1 | | - 7 | 1.20 | 1 | i | | ř | i | i | Ten (41.74) | 1.1 | | ľ | 0.41 | j | i | i | | i i | 0.66 | | 10 |
| 11 | | - | 1.40 | ì | Ť | | í | Ĩ | î | 0.17 | 11 | | Ĺ | 0.53 | i i | i | Ĭ | Y . | 1 1 | 0.65 | 1.71 | 11 |
| 12 | | 19.00 | 1.40 | 4 | - 1 | | Î | ì | ī | 0.17 | 11 | | ŀ | 0.48 | Î | î | - 1 | | i i | 0.65 | | 12 |
| 13 | | 7 | 1.60 | | i | | i | i | ì | 0.16 | ΪÍ | | ĺ | 0.40 | i i | i | i | | Ti a | 0.65 | 0.50 | 13 |
| 14 | | | 1.20 | i i | 7 | | ř | Ť | ī | 0.17 | ŤŤ | -// | ì | 0.39 | ı | ì | 9 | 1. | Ť i | 0.64 | | 14 |
| 15 1 | | | 1.30 | 1 | 1 | | ì | î | Ĺ | 0.17 | ΪÍ | | | 0.37 | | ì | ı | | i i | 0.64 | | 15 |
| 16 | | | 1.20 | 40 | 167 | | ì | ì | î | 100 | 11 | 19 | r | 0.35 | | i | i | | i i | 0,64 | - | 16 |
| 17 | | 3.5 | 1.20 | | F | | 1 | ì | ì | 0.14 | UEC SEC | 1 | ľ | 0.37 | | î. | i | e V | T I | 0.64 | 18.1 | 17 |
| 18 | | | 1.30 | ak. | 100 | | 1 | i | ŧ. | 0.14 | ii | | | 0.41 | T | ì | - 1 | | i i | 0.65 | 100 | 18 |
| 19 | | | 1.50 | N. | 10 | | | Ž. | | 0.15 | 100 | | | 0.50 | ì | i i | | | 1 4 | 0.65 | 70 | 19 |
| 20 | | | 1.50 | g. | 1 | | i i | 1 | ı | 0.16 | 975 | 4 | 5 | 0.41 | | i i | i | | T 1 | 0.64 | 828 | 20 |
| 21 | | | 2.00 | MC. | 1: | | | î | i | 0.15 | 11 | li li | ŭ Ĉ | 0.49 | | ì | i | | * | 0.65 | 100 | 21 |
| 22 1 | | - | 1.50 | | 1 | | | | | 0.15 | 71 | | | 0.47 | i | i | i | | i s | 0.66 | - | 22 |
| 23 | | 533 | 1.60 | į. | 1 | | 9 | ì | i. | 0.16 | 11 | | | 0.47 | | ř | 1 | i. | i i | 0.65 | 100 | 23 |
| | | | 1.30 | 1 | 1. | | p. F | i i | â | - Day or High Total | 11 | | | 0.39 | 5 | k 1 | - 1 | | 1 1 | 0.64 | 376 | 24 |
| 24 [| | 1.5 | 1.60 | 1 | 1 | | † | 1 | Š. | 0.13 | 11 | | | 0.43 | (i) | \$ | 1 | | 4 1 | 0.66 | | 25 |
| 25 | | 100 | 1.190 | 1 | i | | 1 | i. | 1 | 0.12 | 11 | - | e P | 0.52 | 7. | ŕ | 1 | | 1 | 0.63 | | 26 |
| 26 | | - | 1.60 | T. | n b | | NO. | | T. | 0.15 | FF | 1 | in in | 0.56 | 7 | r. | 10 | | 1 1 | 0.66 | | 27 |
| 27 | | | 1,60 | 1 | 1 | | | all l | | 0.13 | 11 | | | 0.41 | 7 | * | 1 | | \$ 1 | 0.65 | 230 | 28 |
| 28 | | | 1.70 | 1 | 1 | | Č. | 1 | | | | | | occurrence of the same of the | ā | 2 | 1 | | 4 | | - 30 | |
| 29 | | | 1.60 | 1 | 4 | | L. | T. | I | 0.16 | J. J. | = | li e | 0.53 | | Į. | | | 1 1 | 0.64 | | 29 |
| 30 | | Į. | 1.80 | 1. | 1 | | I. | 4 | <u>,</u> | 0.13 | į I | | | 0.59 | 61 | É | 1 | | | 0.65 | 1 | 30 |
| 31 | | 1 | | ì | 4 | | 1 | I. | 1 | | 1.1 | d | 4- | | | 9. | | | ļ , | | | 31 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (DEC 1983)

| 1 | | | | PRE-CI | HLORINAT | ION | Call Associated | | | | 11 | | | | POST-C | HLORI | ATIO |)N | | | 1 | |
|-------------|------|-------|------|--------|----------|-------|-----------------|--------|-------|------|----------|------|-----|------|-----------|-------|------|--------|------------|------|------|----|
| I DATE I | | 12 | | 1 | | ! | | SIDUAL | C12 | 2 | ίi | (| 212 | | NH3 | 1 | 02 | 500 | SIDUAL Cl2 | | i DA | TE |
| 1 | Dem. | | | 3 | 502 | | | Comb. | | | | Dem. | 1 | Dos. | | 1 | | Free | Comb. | | - | |
| 1 1 | | 1 | 2.00 | F | I | I | | 1 | I | 0.15 | 11. | | | 0.54 | | L | | 1 | 1 | 0.66 | T. | 1 |
| 2 1 | | - 9 | 2.00 | 10. | Ĺ | i | | I | 1 | 0.16 | 1.1 | | 1 | 0.68 | I | 1 | | 1 | 1 1 | 0.64 | 1 | 2 |
| 3 1 | | | 2.10 | i | i | i | | Î | 1 | | 1.1 | | 1 | 0.68 | Ī | 1 | | 1 | 1 1 | 0.65 | ı | |
| 4 1 | | 3 | 2.40 | ř | Ĺ | î | | ì | i | 0.14 | 11 | | 1 | 0.55 | 1 | 1 | | Ĩ | 1 3 | 0.65 | 1 | |
| 5 1 | | | 1.80 | i | ì | i | | ì | ĺ | 0.16 | 11 | | 1 | 0.49 | I. | 1 | | ī | 1 1 | 0.65 | 1 | - |
| 6 1 | | - 5 | 1.30 | ř | ì | î | | ì | i | 0.15 | 1.1 | | 1 | 0.54 | 1 | 1 | | 1 | 1 1 | 0.65 | 1 | - |
| 7 1 | | | 1.70 | ï | i | ï | | i | Î | 0.14 | 1.1 | | 1 | 0.54 | 1 | 1 | | 1 | 1 1 | 0.65 | 1 | |
| 8 1 | | | 1.80 | 1 | Ĭ. | Ì | | î | i | 0.14 | 1.1 | | T | 0.52 | 1 | T | | 1 | 1 1 | 0.65 | 1 | |
| 9 1 | | TÜ. | 2.10 | i | i | î | | Î | ì | 0.15 | 1.1 | | 1 | 0.52 | 1 | 1 | | 1 | 1 1 | 0.65 | 1 | |
| 10 | | | 1.70 | ì | Î | í | | 1 | ì | 0.15 | 11 | | 1 | 0.66 | Ī | 1 | | 1 | 1 1 | 0.67 | 1 | 1 |
| 11 (| | - | 2.10 | i | i | i | | i | i | 0.14 | 1.1 | | 1 | 0.69 | Î. | 1 | | 1 | 1 | 0.66 | 1 | 1 |
| 12 | | 120 | 1.80 | î | i | î | | i. | i | 0.15 | 11 | | I | 0.50 | 1 | 1 | | 1 | 1 1 | 0.65 | l | 1 |
| 13 | | 4 | 1.90 | i | i | 1 | | i | ì | 0.15 | 1.1 | | 1 | 0.49 | Ĩ | 1 | | Ī | 1 1 | 0.65 | ī | 1 |
| 14 | | | 1.50 | i | i | î | | î | È | 0.18 | ΪΪ | | ì | 0.50 | Ĭ | 1 | | i. | 1 1 | 0.65 | 1 | 1 |
| 15 I | | | 1.30 | i | Î | î | | Ť | 1 | 0.16 | 1.1 | | 1 | 0.36 | 1 | 1 | | 1 | 1 3 | 0.65 | 1 | 1 |
| 16 | | | 1.80 | ì | i | i | | i | ī | 0.14 | 1.1 | | 1 | 0.57 | 1 | 1 | | T. | 1 | 0.64 | 1 | 1 |
| 17 1 | | 1 | 1.60 | i | i | ì | | i | Ť | 0.14 | 1.1 | | Ĩ | 0.53 | î. | 1 | | 1 | 1 | 0.65 | 1 | 1 |
| 18 | | | 1.20 | ì | Ť | i | | ì | Ť | 0.18 | - CI D | | 1 | 0.53 | | 1 | | 1 | 1 | 0.66 | 1 | 1 |
| 19 1 | | 17 | 0.89 | ì | í | ì | | i | ì | 0.16 | TI | | 1 | 0.37 | 1 | ı | 2 | 1. | 1 | 0.64 | 1 | 1 |
| 20 1 | | 30 | 1.20 | 1 | i | i | | î | Ť | 0.15 | 5 5 | | 1 | 0.44 | Î | ı | | 1 | Ī | 0.64 | Í | 2 |
| 21 | | | 0.90 | ŀ | ì | i | | ì | İ | 0.17 | | | ı | 0.30 | ĺ | 1 | | Ĭ | 1 | 0.65 | Ī. | 2 |
| 22 1 | | | 0.88 | Í | Î | î | | î | i | 0.15 | 100 | | 1 | 0.30 | 1 | 1 | | Į. | T. | 0.63 | 1 | 2 |
| 23 1 | | 100 | 0.90 | Ï | Ť | i | | i | i | 0.16 | | | 1 | 0.27 | I | 1 | | 1 | Ĩ | 0.64 | Ĭ | 2 |
| 24 | | - | 1.07 | Î | ì | i | | i | i | 0.15 | 200 | | Ì | 0.31 | Ĺ | ĺ | | Ĭ. | Ì | 0.64 | ĭ | 2 |
| 25 1 | | | 1.07 | î | k | i i | | i | 1 | 0.17 | | | ì | 0.33 | Ĭ | 1 | | T | Ť | 0.66 | 1 | 2 |
| 26 1 | | 733 | 1.10 | î | i | i | | i | i | 0.15 | ΪĨ | | 1 | 0.30 | I | 1 | | 1 | Ĺ | 0.65 | 1 | 2 |
| 27 1 | | | 0.70 | ŕ | ř | í | | Ť | i | 0.15 | 700 | | ì | 0.20 | Ì | 1 | | ľ | Ĭ | 0.64 | 1 | 2 |
| 28 1 | | (7) | 0.90 | Î | i | i | | i | i | 0.20 | ii | | i | 0.30 | Î | ì | | ľ | 1 | 0.63 | ĺ | 2 |
| 29 1 | | | 0.86 | i | i | į | | i | î | 0.16 | ίi | | i | 0.29 | i | î | | ľ | 1 | 0.67 | İ | 2 |
| 30 | | 550 | 0.81 | ř | i | i | | i | Ĺ | 0.17 | îi | | í | 0.25 | i | ì | | 1 | 1 | 0.67 | | 3 |
| 31 1 | | 11-71 | 1.00 | r. | ľ | ì | | | î | 0.20 | ΪÍ | | 1 | 0.31 | ì | | | 1 | Ť. | 0.67 | i | 3 |

TABLE 3.1: DISINFECTION PROFILE (JAN 1984)

| į | | | | PRE-CI | HLORINATI | ON | | _ 15 | | 11 | | | | HLORINATI | on | الدائدات مالدائيات كال | | 1 - 1 |
|------|------|-----|------|--------|------------------------|-------|--------|------|---------------|-----|-----|------|-----|------------|--------|------------------------|-------|----------|
| DATE | | :12 | | 1 | | 58/ | SIDUAL | C12 | 2 | ii | C12 | | i | l 1 502 | I RE | ESIDUAL CL | ? | DATE |
| i | Dem. | | | NH3 | 502 | Free | | | | Dem | | | 1 | 502 | Free | [Comb. | Total | ļ |
| 1 (| | 1 | 0.80 | | . <i>– –</i> –––– I | 1 | 1 | 1 | 0.19 | 11 | 1 | 0.26 | | 1 |] | 1 | 0,68 | |
| 2 1 | | 1 | 0.98 | 1 | i | J | 1 | ı | 0.16 | 1.1 | 1 | 0.27 | 1 | II. | 1. | 1 | 0.67 | 1 : |
| 3 1 | | 1 | 0.99 | 1 | 1 | 1 | Î | 1 | 0.26 | 1.1 | 1 | 0.28 | 1 | Ĭ | I | 1 | 0.67 | 1 3 |
| 4 1 | | Î | 0.94 | Ì | Î | T | l | 1 | 0.30 | 1.1 | 1 | 0.29 | I | 1 | ſ | 1 | 0.69 | 1 |
| 5 1 | | Î | 0.96 | 1 | 1 | 1 | 1 | 1 | 0.30 | 1.1 | 1 | 0.26 | 1 | 1 | 1 | 1 . | 0.69 | 1 3 |
| 6 1 | | î | 0.80 | Î | Ĺ | Ī | 1 | į | 0.28 | 11 | 1 | 0.25 | 1 | Ĭ | i | 1 | 0.66 | 1 3 |
| 7 1 | | Î | 0.89 | i | I | Î | ř. | 1 | 0.20 | 1.1 | 1 | 0.26 | 1 | 1 | 1 | 3 | 0.67 | 1 |
| 8 1 | | î | 0.80 | ĺ | Ī | 1 | 1 | 1 | 0.18 | 1.1 | 1 | 0.27 | I | 1 | 1 | 1 | 0.67 | 1 8 |
| 9 1 | | î | 0.94 | ì | ì | ī | I. | 1 | 0.24 | 11 | 1 | 0.28 | Ĭ. | Ĺ | 1 | 1 | 0.66 | 1 2 |
| 10 i | | Ť | 0.92 | i | i | Î | 1 | 1 | 0.26 | 11 | Ť | 0.26 | Ť | Ī | Î | î | 0.68 | 1 10 |
| 11 1 | | î | 0.86 | i | Í | T | I | 1 | 0.31 | 1.1 | 1 | 0.28 | ſ | 1 | 1 | 1 : | 0.68 | 1 1 |
| 12 | | ī | 0.94 | ı | Ī | ī | 1 | 1 | 0.27 | 11 | 1 | 0.28 | l | Ĺ | 1 | 1 | 0.69 | 1 1: |
| 13 I | | i | 1.00 | i | ì | i | 1 | 1 | 0.28 | 11 | 1 | 0.28 | 1 | Ī | 1 | i | 0.68 | 1 1 |
| 14 i | | Í | 0.78 | ì | İ | İ | Ĭ. | 1 | 0.25 | 11 | 1 | 0.28 | 1 | 1 | 1 | i | 0.67 | 170 |
| 15 (| | 1 | 0.68 | Ì | I | 1 | 1 | 1 | 0.21 | 1.1 | 1 | 0.25 | I. | 1 | ı | 1 | 0.67 | 1 1 |
| 16 | | 1 | 0.83 | ľ | 1 | Ì | 1 | i | 0.24 | 11 | 1 | 0.25 | 1 | 1 | ı | 1 | 0.66 | 1 1 |
| 17 | | Ĩ | 0.86 | į. | Ī | Î | 1 | l | 0.26 | 1.1 | 1 | 0.27 | Ĭ. | 1 | 1 | 1 | 0.68 | 1 1 |
| 18 | | Ť | 0.98 | T. | 1 | I | 1 | 1 | 0.23 | 11 | 1 | 0.27 | I | 1 | 1 | i | 0.65 | 1 13 |
| 19 | | 1 | 0.85 | 1 | 1 * | 1 | Ĭ. | L | 0.24 | 11 | 1 | 0.26 | Ĩ | i | 1 | i i | 0.67 | 1 1 |
| 20 I | | 1 | 1.02 | f | Ĺ | i | Ĺ | 1 | 0.18 | 1.1 | Î | 0.28 | I | i | 1 | 1 | 0.67 | 1 2 |
| 21 | | 1 | 0.80 | Ĭ. | 1 | 1 | Ť | 1 | 0.21 | 1.1 | 1 | 0.24 | T | 1 | 3 | 1 | 0.67 | 1 2 |
| 22 | | i | 0.86 | î | ī | î | 1 | 1 | 0.19 | 11 | 1 | 0.29 | 1 | 1 | ı | 1 | 0.66 | 1 2 |
| 23 1 | | î | 0.97 | Í | Î | Î | | I | 0.23 | 11 | Ī | 0.29 | 1 | Ī | ı | 1 | 0.67 | 1 2 |
| 24 1 | | i | 0.85 | ì | Î | ĺ | i | ĺ | 0.27 | 11 | i | 0.25 | 1 | 1 | 1 | 1 | 0.70 | 1 2 |
| 25 | | i | 0.88 | i | i | Ī | 1 | ī | | ii | ŕ | 0.26 | - | i | i | i · | 0.69 | 1 2 |
| 26 1 | | 1 | 0.91 | ì | | Ī | | i | 0.23 | ii | i | 0.26 | 151 | Î | i | ı | 0.67 | 1 2 |
| 27 | | Ŷ. | 0.81 | ì | 1 | | İ | i | 1990 00000000 | 11 | i | 0.26 | - | Ť | i | I | 0.66 | A-87-554 |
| 28 | | å | 0.91 | i | i | î | T . | i | 0.18 | 11 | Ť | 0.28 | Ť | i | 11 | 1 | 0.65 | - |
| 29 | | 1 | 0.66 | | | Ŷ | | i | 0.16 | ii | | 0.27 | i | Ï | ì | i | 0.66 | - 5 |
| 30 I | | | 0.97 | Ů, | 100 | | i | ŕ | 0.24 | i i | | 0.29 | i | ì | i | i | 0.67 | |
| 30 j | | 100 | 0.86 | i i | i i | i. | | 1 | 0.22 | | | 0.26 | * | i. | i i | ar . | 0.68 | |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (FEB 1984)

| 1 | | | | PRE-CI | HLORINAT | ION | | | | | - | l I ====== | | | POST-C | HLOR | INATI | on | | | | - T | |
|------------|------|-----|------|--------|----------|-----|----|--------|----------|------|--------|--|------|------|--------|------|-------|--------|-----|-----------|------|-----|------|
| ATE | | :12 | | | | 1 | RE | SIDUAL | C1: | 2 | î | I C | 12 | | I | l | 502 | | | IDUAL C12 | | | DATE |
| 1 | Dem. | | Dos. | i | ĺ | ١ | | Comb. | | | | [Dem. | 1 | Dos. | I | ı | | | I | Comb. | | | |
| 1 I | | 1 | 0.88 | | | 1 | | 1 | 1 | 0.21 | ŀ | The second secon | 1 | 0.25 | | 1 | 100 | 1 | ı | I | 0.67 | 1 | 1 |
| 2 1 | | | 0.89 | | Î | 1 | | 1 | 1 | 0.26 | 1 | 1 | 1 | 0.27 | ĺ | 1 | | 1 | I | 1 | 0.68 | 1 | 2 |
| 3 1 | | 25 | 0.97 | | i | 1 | | ľ | L | 0.23 | ī | F | 1 | 0.28 | ı | l. | | 1. | - 1 | 1 | 0.68 | 1 | 3 |
| 4 1 | | -35 | 0.74 | | î | i | | Ĩ. | ì | 0.18 | Ī | Ĺ | Ĺ | 0.24 | 1 | 1 | | Ĩ | 1 | Ĩ | 0.67 | 1 | 4 |
| 5 1 | | | 0.73 | Í | ì | 1 | | ì | 1 | 0.17 | 1 | I | 1 | 0.28 | 1 | 1 | | 1 | ı | 1 | 0.67 | 1 | 5 |
| 6 1 | | ì | 0.90 | ì | T. | 1 | | Î | 1 | 0.21 | Ī | ĺ | 1 | 0.28 | I. | 1 | | 1 | 1 | 1 | 0.66 | 1 | 6 |
| 7 1 | | Ť | 0.90 | i | i | 1 | | I | Î | 0.22 | ſ | f. | 1 | 0.27 | 1 | 1 | | t | l | ĺ. | 0.66 | 1 | 7 |
| 8 1 | | Ť | 0.96 | | î | i | | Í | 1 | 0.22 | Ť | Î | 1 | 0.28 | Î | 1 | | 1 | 1 | 1 | 0.68 | Ī | 8 |
| 9 1 | | i | 0.97 | | i | ì | | Ť | 1 | 0.22 | 1 | ı | 1 | 0.30 | 1 | 1 | | i. | 1 | 1 | 0.65 | 1 | 9 |
| 10 1 | | i | 0.86 | 2 | ř | i | | ľ | Î | 0.20 | î | Ě | 1 | 0.26 | Ī | Ī | | Ĩ | - 1 | ı | 0.67 | 1 | 10 |
| 11 | | i | 0.82 | i | î | ì | | î | Ť | 0.18 | | Î. | i | 0.28 | Î | î | | Î | 1 | 1 | 0.67 | 1 | 11 |
| 12 | | i | 0.66 | 1 | î | i | | i | i | 0.16 | i | Ĺ | ì | 0.26 | Î | ĺ | | ì | ı | i i | 0.67 | 1 | 12 |
| 13 | | ł | 0.90 | i | i | i | | 1 | T. | 0.20 | Ĺ | Ē. | 1 | 0.28 | Ī | f | | 1 | 1 | 1 | 0.67 | 1 | 13 |
| 14 | | - | 0.94 | ì | i | i | | î. | ī | 0.19 | Ť | ì | i | 0.27 | | Î | | į. | 1 | Î | 0.67 | 1 | 14 |
| 15 I | | ÷ | 1.04 | 1 | i | i | | î | ï | 0.25 | ı. | ř | í | 0.29 | 1 | i | | î | i | í | 0.66 | 1 | 15 |
| 16 1 | | 1 | 0.80 | i | i | í | | i | ì | 0.29 | i. | i. | í | 0.26 | | Ť | | Ť | - 1 | 1 | 0.67 | 1 | 16 |
| 17 | | å | 0.68 | ì | i | i | | i | i | 0.20 | î | Ê | î | 0.20 | - | ī | | î. | Ĩ | i | 0.66 | Ĩ | 17 |
| 18 | | i | 0.76 | 1 | i | î | | ì | i | 0.16 | i | į L | i | 0.27 | 1 | i | | Ť. | i | | 0.67 | ì | 18 |
| 19 | | 4 | 0.90 | 1 | i | i | | i | i | 0.17 | i | i · | i | 0.28 | İ | i | | Ė | i | í | 0.67 | Ĭ. | 19 |
| 20 1 | | | 1.00 | i | i | i | | i | i | 0.20 | i | ì | î | 0.28 | ì | î | | î | ì | ì | 0.65 | 1.0 | 20 |
| 20 1 | | 9 | 1.10 | i | 1 | 1 | | 1 | ì | 0.23 | î. | ľ | i | 0.28 | Î | i | | i | i | i | 0.67 | 3 | 21 |
| 22 | | | 0.84 | 1 | 1 | 1 | | i | i | 0.28 | i | Ĺ | i | 0.29 | 7 | ì | | 1 | i | i | 0.67 | | 22 |
| 23 | | 10 | 0.86 | 1 | Ť | i | | ř | i | 0.28 | i | i | i | 0.27 | | i | | í | í | í | 0.66 | | 23 |
| 24 | | | 0.88 | 1 | i | i | | Ť | i | 0.28 | i | Î | 1 | 0.26 | | i | | Ē | i | Í | 0.66 | | 24 |
| 25 | | - | 1.00 | i | 1 | - 1 | | Í | i | 0.29 | í | 1 | ì | 0.36 | 1 | i | | í | i | i | 0.69 | -23 | 25 |
| 25 I | | | 1.30 | ì | i | -1 | | i | 1 | 0.27 | ì | ì | ĺ | 0.33 | 2 | i | | i e | i | i | 0.68 | | 26 |
| Section 14 | | - 6 | 1.10 | | 1 | 1 | | i | 1 | 0.25 | í | ľ | 1 | 0.33 | | i | | í | í | 4 | 0.68 | | 2 |
| 27 | | | | 1 | 1 | -1 | | 1 | | 0.20 | 1 | i | | 0.35 | le. | i | | | | | 0.70 | 3 | 28 |
| 28 | | | 1.20 | 1 | 1 | 1 | | į. | 1 | 0.28 | -33 | ģ. | ì | 0.46 | | - 1 | | Ŷ | | i | 0.69 | | 29 |
| 29 | 0 | 1 | 1.50 | 1 | 1 | , | | į. | /d ij | 0.20 | Î | | Ť | 0.40 | 1 | 1 | | í | | 1 | 0.09 | 1 | 30 |
| 30 31 | | 1 | | 1 | d. | | | 1 | 1 | | 1. | 1 | ili. | | 1 | 3. | | 1 | | | | - | 3.3 |

TABLE 3.1: DISINFECTION PROFILE (MAR 1984)

| Į. | | | | PRE-C | HLC | RINATIO | N | | | | | 11 | | | POST | -CHLC | RINATI | on | | | | i. | |
|------|------|-------|------|------------|-----|---------|------|-----|---|-------|-------|---------|------|------|--|-------|--------|--------|-----------|----|-------|------|-----------|
| DATE | c) | | | NU3 | 1 | so2 | R | | UAL C | | | ji. | C12 | | l I | - 1 | S02 | į RI | ESIDUAL C | 12 | | I D. | ATE |
| | Dem. | | | At Section | ì | 302 | Free | | | | al | -60 | | | T. 1000000000000000000000000000000000000 | i | SUZ | Free | Comb. | 1 | Total | İ | NT 17 - 5 |
| 1 | | I | 1.30 | | 1 | | 1 | Ĭ | i de la composición de la composición de la composición de la composición de la composición de la composición d La composición de la composición de la composición de la composición de la composición de la composición de la | 0. | 26 | 11 | 1 | 0.40 | 1 | ī | | I | t | 1 | 0.68 | | 1 |
| 2 | | 1 | 1.20 | 1 | 1 | | 1 | 1 | | 0. | 25 | 11 | 1 | 0.38 | 1 | 1 | | 1 | 1 | 1 | 0.67 | 1 | 2 |
| 3 | | 1 | 0.82 | 1 | 1 | | Î | 1 | | 0. | 25 | 1.1 | 1 | 0.29 | 1 | 1 | | 1 | T | 1 | 0.66 | Ì | 3 |
| 4 | | 1 | 0.98 | Ī | 1 | | Ĭ | 1 | i i | 0. | 24 | 1.1 | 1 | 0.39 | 1 | 1 | | Ī | Ĭ | 1 | 0.67 | 1 | 4 |
| 5 1 | | 1 | 1.30 | 1 | 1 | | Ĩ | 1 | 1 | 0. | 25 | 1.1 | 1 | 0.41 | 1 | 1 | | 1 | 1 | 1 | 0.67 | 1 | 5 |
| 6 | | ı | 1.20 | 1 | 1 | | 1 | 1 | 1 | 0. | 24 | 1.1 | 1 | 0.35 | 1 | 1 | | ĭ | 1 | 1 | 0.68 | ì | € |
| 7 1 | | | 1.30 | 1 | 1 | | Ì | Ť | 1 | 0. | 26 | 11 | 1 | 0.40 | | 1 | | 1 | i i | 1 | 0.69 | ſ | 1 |
| 8 1 | | 50 | 1.10 | 1 | 1 | | 1 | 1 | 1 | 0. | 28 | 1.1 | 1 | 0.35 | 1 | 1 | | F | 1 | T | 0.68 | 1 | 8 |
| 9 1 | | | 1.30 | 1 | 1 | | 1 | 1 | j | | 22 | | 1 | 0.27 | 1 | Î | | Ĭ | 1 | L | 0.67 | i | |
| 10 | | | 1.10 | 1 | î | | i . | . 1 | | 0. | 24 | 1.1 | 1 | 0.48 | 1 | 1 | | ı | 1 | 1 | 0.67 | Ī | 10 |
| 11 | | | 1.30 | ì | 1 | | Î | 1 | i | 0. | 27 | 1.1 | 1 | 0.50 | 1 | 1 | | 1 | 1. | 1 | 0.66 | 1 | 1 |
| 12 | | | 1.40 | Ĭ | 1 | | T | Ī | i | 0. | 25 | 1.1 | 1 | 0.36 | 1 | 1 | | 1 | ł | 1 | 0.67 | Ť. | 12 |
| 13 | | | 1.30 | Î. | î | | ĺ | Î | - 1 | | 26 | | 1 | 0.37 | 1 | 1 | | 1 | 1 | 1 | 0.68 | 1 | 13 |
| 14 | | - | 1.30 | 1 | 1 | | ĺ | ì | i | | 26 | | 1 | 0.38 | 1 | f | | Î | 1 | 1 | 0.67 | 1 | 14 |
| 15 i | | | 1.30 | ì | i | | Ĩ | i | i | | 25 | | 1 | 0.38 | 1 | Ĩ | | Ī | 1 | 1 | 0.66 | 1 | 15 |
| 16 | | | 1.40 | 1 | ì | | i | Ť | î | | 26 | 5.11 | 1 | 0.39 | | 1 | | 1 | Î | 1 | 0.67 | 1 | 1(|
| 17 i | | 100 | 1.40 | ì | Ĭ. | | 1 | Ŷ | i | | | 11 | 1 | 0.50 | ï | 1 | | 1 | I | 1 | 0.67 | 1 | 1 |
| 18 | | (5) | 1.50 | i | L | | i | i | i | 00110 | 25 | ΪÊ | 1 | 0.43 | 1 | Ĩ | | 1 | 1 | 1 | 0.67 | T | 18 |
| 19 | | | 1.50 | ì | i | | í | î | i | 0. | 29 | 11 | Ĺ | 0.41 | Ĩ | Î | | i e | - 1 | ĺ | 0.68 | ì | 19 |
| 20 | | | 1.30 | i | i | | i | ì | i | | 26 | 9 2 | í | 0.40 | 1 | İ | | 1 | 1 | i | 0.67 | ì | 20 |
| 21 | | 2 | 1.30 | i | i | | ì | í | ì | | 25 | | i | 0.41 | | i | | i | ī | i | 0.67 | • | 2 |
| 22 | | | 1.80 | ř | 1 | | i | 4 | , i | | 23 | 2 2 | î | 0.36 | 5 | i | | Î | ĺ | i | 0.67 | 100 | 2: |
| 23 1 | | | 1.40 | 1 | i | | 1 | Ť | 1 | | | í i | í | 0.37 | | i | | Í | Î | i | 0.66 | | 2: |
| 24 | | 100 | 1.60 | ř | ĺ | | i | 1 | i | | 2.000 | ii | ï | 0.43 | | Ĩ | | Ť | ì | i | 0.66 | | 2 |
| 25 | | | 1.40 | ř | 1 | | i | 1 | 3 | | 25 | | ì | 0.51 | | i | | ì | ì | i | 0.66 | | 2: |
| 26 | | | 1.60 | ì | 1 | | Î | î | | | | 11 | i | 0.42 | 2 | j | | î | i | i | 0.68 | 70 | 2 |
| 27 | | | 1.40 | ì | 1 | | Î | i | 1 | | 25 | | Ť | 0.38 | | Î | | i | ľ | i | 0.68 | | 2 |
| 28 1 | | - | 1.20 | r F | i | | 1 | i | 9 | | 29 | 10 1961 | î | 0.36 | 17 | i | | 1 | 4 | i | 0.68 | 100 | 28 |
| 29 1 | | (0) | 1.20 | 4 | 1 | | 1 | | 1 | | 25 | | i | 0.42 | -30 | | | Ī | | i | 0.67 | | 2 |
| 30 | | 60. | 1.30 | 1 | | | 1 | | 1 | | 26 | | 4 | 0.41 | .1 | 1 | | ŕ | î | i | 0.66 | 20 | 30 |
| 31 | | | 1.40 | 90 | 1 | | 4 | | 4 | | 22 | 8 | 40 | 0.44 | g D | 1 | | i | k. | | 0.68 | | 31 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (APR 1984)

| i | | | | PRE-CH | HLORINA | MOITA | | | | | 11 | | | | POS | T-CI | HLOF | INATIO | NC | | | | | ĭ | |
|------------|------|-------|------|---------|---------|-------|----|--------|-------|-----------------|--------------|------|---|------|-----|------|------|--------|----|------|----------|----|------|-----|-----|
| I ATE | | 12 | | I | | | | SIDUAL | C12 | 2 | 11 | C1 | 2 | | 1 | 2 | 1 | CO2 | l | | DUAL C12 | | | į D | ATE |
| 1 | Dem. | | | # P2275 | so | | | | | | | Dem. | | Dos. | l | | 1 | | J | | Comb. | | | | |
| 1 / | | 1 | 1.79 | I | | 1 | | 1 | [| 0.23 | 11 | | | 0.50 | | | Ĺ | | ì | 1 | | ľ | 0.66 | i | 1 |
| 2 1 | | (*) | 1.50 | İ | Ī | ĺ | | ì | Ī | 0.29 | 1.1 | Î | | 0.45 | ı | | 1 | | 1 | -t | | ı | 0.68 | 1 | 2 |
| 3 1 | | | 1.50 | i | Î | i | | 1 | 1 | 0.25 | 1.1 | 1 | | 0.45 | I | | 1 | | 1 | 1 | | | 0.67 | ì | 3 |
| 4 1 | | 63.0 | 1.30 | Î | 1 | Ī | | 1 | 1 | 0.27 | 1.1 | 1 | | 0.40 | 1 | | 1 | | 1 | Ť | | Ĺ | 0.68 | 1 | 4 |
| 5 1 | | 17 | 1.30 | ì | i | î | | ĺ | 1 | 0.28 | 1.1 | i | | 0.42 | ĺ | | 1 | | l | Ţ. | | l | 0.68 | 1 | 5 |
| 6 1 | | 0.00 | 1.30 | i | 1 | 1 | | 1 | ı | 0.29 | 11 | i | | 0.42 | 1 | | L | | 1 | 1 | | | 0.69 | 1 | 6 |
| 7 1 | | 150 | 1.30 | ı | ī | ı | | 1 | 1 | 0.25 | 1.1 | 9 | | 0.42 | I | | 1 | | 1 | 1 | | 1 | 0.67 | 1 | 7 |
| 8 1 | | -30 | 1.30 | Î | i | î | | 1 | 1 | 0.24 | 11 | j | | 0.43 | I | | ĵ | - | 1 | 1 | | 1 | 0.66 | 1 | 8 |
| 9 1 | | 190 | 1.50 | i | 1 | I | | 1 | 1 | 0.25 | 1.1 | i | | 0.40 | 1 | | 1 | | 1 | 1 | j | l. | 0.67 | 1 | 9 |
| 10 I | | | 1.30 | i | ì | 1 | | ľ | 1 | 0.25 | \mathbf{I} | 1 | ĺ | 0.38 | I | | 1 | | 1 | 1 | | 1 | 0.68 | 1 | 10 |
| 11 1 | | 25 | 1.60 | î | ī | ń | | 1 | 1 | 0.28 | 1.1 | | ĺ | 0.47 | 1 | | 1 | | 1 | 1 | | 1 | 0.68 | 1 | 13 |
| 12 | | 7.47 | 1.50 | Í | Ī | 1 | | 1 | 1 | 0.30 | 1.1 | 1 | | 0.42 | ĺ | | 1 | | 1 | 1 | | I | 0.66 | 1 | 13 |
| 13 | | | 1.50 | Î | i | 1 | | Ĭ. | ľ | 0.32 | 1.1 | 1 | | 0.41 | 1 | | 1 | | i | 1 | | 1 | 0.67 | 1 | 13 |
| 14 | | | 1.40 | i | 1 | 1 | | 1 | 1 | 0.28 | 1.1 | j | | 0.45 | 1 | | 1 | | 1 | 1 | | ı | 0.68 | 1 | 1 |
| 15 | | 107.5 | 1.70 | Í | ĺ | 1 | | ĺ | Ĭ | 0.23 | 1.1 | ì | Ì | 0.44 | 1 | | 1 | | 1 | 1 | | 1 | 0.66 | 1 | 15 |
| 16 | | | 1.50 | ì | î | 1 | | 1 | 1 | 0.26 | 11 | 1 | | 0.41 | ŧ . | | 1 | | 1 | 1 | | ı | 0.67 | 1 | 1 |
| 17 i | | | 1.30 | i | Í | 1 | | 1 | t | 0.27 | 1.1 | 1 | ĺ | 0.41 | ı | | 1 | | I | 1 | | i | 0.66 | t | 1 |
| 18 | | - 7 | 1.30 | i | î | i | | Î. | ĺ | 0.22 | 11 | | ĺ | 0.40 | Î | | 1 | | 1 | -1 | | l | 0.67 | 1 | 18 |
| 19 | | 1.50 | 1.40 | ì | Î | . 1 | 12 | Ī | ĺ | 0.21 | 1.1 | | ĺ | 0.41 | i | | 1 | | 1 | 1 | | l | 0.66 | 1 | 1 |
| 20 1 | | 154 | 1.60 | ì | Î | i | | 1 | Ī | 0.23 | 1.1 | 1 | Ĺ | 0.52 | l. | | 1 | | 1 | 1 | | 1 | 0.67 | 1 | 20 |
| 21 1 | | 175 | 1.80 | i | i | i | | 1 | Î | 0.19 | 1.1 | i | ĺ | 0.48 | I | | 1 | | 1 | 1 | | l | 0.66 | 1 | 2 |
| 22 | | | 1.70 | Í | Ï | i | | Ĭ. | 1 | 0.21 | 11 | | | 0.44 | 1 | | i | | 1 | 1 | | ı | 0.66 | 1 | 22 |
| 23 | | - 5 | 1.80 | î | Î | i | | 1 | 1 | 0.23 | 1.1 | | ĺ | 0.47 | Ĭ | | 1 | | 1 | 1 | | ı | 0.67 | 1 | 2 |
| 24 | | | 1.50 | i | i | i | | i | t | 0.22 | 11 | 1 | 1 | 0.42 | 1 | | 1 | | 1 | 1 | | 1 | 0.68 | 1 | 2 |
| 25 1 | | | 1.30 | 1 | Ï | ì | | ì | 1 | 0.19 | 11 | | 1 | 0.39 | 1 | | I | | 1 | 1 | | ı | 0.65 | 1 | 2 |
| 26 | | 100 | 1.30 | ì | Í | i | | P | 1 | 0.16 | 11 | | | 0.40 | Î | | 1 | | 1 | 1 | | 1 | 0.66 | I | 2 |
| 27 | | | 1.50 | i | i | i | | ī | 1 | 0.15 | 11 | | ŀ | 0.40 | 1 | | 1 | | 1 | 1 | | 1 | 0.64 | ĺ | 2 |
| 28 | | - 2 | 1.50 | Ì | î | i | | ì | i | 0.16 | 11 | | | 0.48 | Ĭ | | ì | | -1 | 1 | | 1 | 0.66 | 1 | 2 |
| 29 | | | 1.50 | î | ì | i | | Ť | Ĺ | 0.17 | 2 3 | | l | 0.44 | Î | | 1 | | Ī | 1 | | 1 | 0.65 | 1 | 2 |
| 30 | | | 1.50 | Ď. | ì | | | 1 | i | 0.15 | | | | 0.42 | i | | 1 | | ï | 1 | | 1 | 0.64 | 1 | 3 |
| 31 | | 4 | | i. | í | 1 | | i | ñ | 1000 Tel - 1000 | i i | | ř | | î | | | (4) | 1 | 1 | | 1 | | 1 | 3 |

TABLE 3.1: DISINFECTION PROFILE (MAY 1984)

| I | | | | PRE-C | HLOR1 | NATION | | | | | 11 | | | | POST-C | HLORINATI | on | | | 1 |
|------|------|-----|---------|-------|-------|--------|---------|--------|------|-----------|-------|-----|----|------|----------|------------|--------|------------|-------------|--|
| DATE | Cl | | ! | | ı | | -000000 | SIDUAL | C12 | | 11 | | 12 | | | l I S02 | P 0.55 | SIDUAL C12 | | DATE |
| 1 | Dem. | | | NH3 | 1 | | Free | | | | 19.16 | | | | 1 | 1 502 | | Comb. | 10 mm / 175 | |
| 1 | | 1.7 | 0 1 | | 1 | | | · | 1 | 0.15 | 11 | | 1 | 0.55 | I | 1 | | 1 1 | 0.65 | 1 3 |
| 2 | | 2.1 | 0 1 | | 1 | j | | l | 1 | 0.15 | 11 | | 1 | 0.57 | l | ì | T | 1 1 | 0.64 | 1 2 |
| 3 1 | | 1.8 | 0 1 | | 1 | Ĵ | i. | 1 | 1 | 0.17 | 11 | | I | 0.55 | i . | 1 | I | 1 1 | 0.68 | 1 3 |
| 4 1 | | 1.9 | 0 1 | | 1 | | | 1 | 1 | 0.17 | 11 | | 1 | 0.60 | ľ | 1 | 1 | 1 3 | 0.66 | 1 4 |
| 5 1 | | 2.1 | 0 1 | | T | 1 | | Ĩ | 1 | 0.15 | 1.1 | | 1 | 0.58 | ì | Ĭ | 1 | 1 1 | 0.67 | 1 5 |
| 6 1 | | 2.0 | 0 1 | | 1 | ì | e e | 1 | 1 | 0.16 | 1.1 | | 1 | 0.61 | L | 1 | 1 | 1 1 | 0.66 | 1 6 |
| 7 1 | | 1.9 | 0 1 | | 1 | 1 | n | 1 | 1 | 0.19 | 1.1 | | 1 | 0.59 | i | 1 | 1 | 1 1 | 0.66 | 1 5 |
| 8 1 | | 1.8 | | | 1 | j | | 1 | 1 | 0.16 | 1.1 | | l | 0.51 | i | Î | Ĩ | I I | 0.67 | 8 |
| 9 1 | | 1.0 | 8 | | î | ì | | Î | 1 | 0.32 | 11 | | 1 | 0.32 | 1 | Ĩ | 1 | 1 1 | 0.65 | 1 9 |
| 10 1 | | 0.9 | 4 | | 1 | | | T | 1 | 0.25 | 1.1 | | I | 0.29 | } | 1 | 1 | 1 1 | 0.64 | 1 10 |
| 11 i | | 0.9 | | | 1 | | | 1 | l | 0.17 | 1.1 | | 1 | 0.26 | i | Ī | T | 1 1 | 0.64 | 1 1: |
| 12 | , | 1.0 | 6 1 | | Ĭ | | | Ĭ | ı | 0.18 | 11 | | 1 | 0.26 | <u> </u> | Î | İ | i i | 0.65 | 1 13 |
| 13 | | 1.1 | | | Î | | 00 | 1 | 1 | 0.16 | 11 | | 1 | 0.31 | 1 | 1 | 1 | 1 1 | 0.64 | 1 13 |
| 14 | | 1.2 | | | f | i | 1 | 1 | 1 | 0.14 | 11 | | 1 | 0.36 | t | Ì | Ĺ | Ĭ Ī | 0.65 | 1 1 |
| 15 1 | | 1.1 | | | î | | | 1 | 1 | 0.16 | 1.1 | | 1 | 0,34 | 1 | î | 1 | 1 1 | 0.64 | 1 19 |
| 16 | | 1.3 | | | ı | | É | Ť | 1 | 0.13 | 11 | | 1 | 0.34 | 1 | 1 | 1 | 1 1 | 0.65 | 1 10 |
| 17 1 | 3 | 2.1 | | | Í | | | 1 | 1 | 0.12 | 11 | | 1 | 0.39 | 1 | Ĩ | 1 | 1 1 | 0.67 | 1 1 |
| 18 I | | 2.9 | | | ì | | | Ĭ. | I | 0.18 | 11 | | 1 | 0.65 | į | 1 | 1 | 1 1 | 0.68 | 1 18 |
| 19 I | | 2.4 | | | ì | | | 1 | 1 | 0.23 | 1.1 | 7.8 | 1 | 0.80 | 1 | 1 | 1 | 1 1 | 0.67 | 1 19 |
| 20 1 | | 3.1 | | | ì | i | ľ | i | 1 | 0.23 | 11 | | 1 | 0.89 | ı | Ĩ | 1 | 1 1 | 0.67 | 1 20 |
| 21 1 | | 2.7 | | | Ĺ | | U | Ĭ | i | 0.23 | 1.1 | | 1 | 0.83 | i | ì | 1 | i i | 0.67 | 1 2: |
| 22 | | 2.2 | 32 38 | | Î | | l) | 1 | 1 | 0.26 | 11 | | Ì | 0.81 | I | Ĭ | 1 | 1 1 | 0.67 | 1 2 |
| 23 1 | | 2.5 | | | i | Ĭ | | f. | 1 | 0.20 | 11 | | 1 | 0.68 | 1 | 1 | 1 | 1 1 | 0.67 | 1 2 |
| 24 | | 2.4 | | | i | 1 | | i | 120 | | 11 | | 1 | 0.73 | 4 | i | Î | i i | 0.65 | 12 1000 |
| 25 1 | | 2.4 | 37E 8 | | î | 3 | | ì | 1 | 0.24 | 11 | | 1 | 0.74 | 1 | Î | 1 | ı i | 0.67 | 18. |
| 26 1 | | 2.7 | | | i | 1 | | Ĺ | 1 | 0.20 | 11 | | Î | 0.80 | t | 1 | 1 | 1 1 | 0.68 | * **** |
| 27 | | 3.1 | | | i | 1 | | i | 190 | 0.19 | ii | | i | 0.93 | İ | Î | Î | i i | 0.67 | |
| 28 1 | | 2.5 | | | Ŷ. | ě | | 27 | 150 | 0.27 | 11 | | i | 0.74 | i | i | Î | i i | 0.68 | |
| 29 | | 3.3 | | | ŕ | 1 | | ì | 19.0 | 0.25 | ΪÎ | | ì | 0.73 | Ī | î | Ĺ | i i | 0.67 | |
| 30 | | 2.2 | | | Ť. | í | 8 | ì | 350 | 0.21 | 11 | | i | 0.63 | i | i | I | i i | 0.67 | - The Contract of the Contract |
| 31 | | 2.3 | | | 140 | | (| à | | nen lekkr | ìì | | ì | 0.68 | | 1 | i | | 0.67 | TE SECUL |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (JUN 1984)

| Ļ | | | PRE-CI | HLORINATI | ON | | | 11 | | | | | HLORINATI | ON | | | - 1 | |
|------------|------|--------|--------|-----------|-----|---------|-----------------|--------|------|----|------|----|-----------|--------|------------|------|-----|-----|
| I DATE | | 12 | ļ | | I R | ESIDUAL | C12 | ii | C | 12 | | Ĭ | 1 502 | 0.6 | SIDUAL C12 | | | ATE |
| 1 | Dem. | Dos. | ĺ | İ | | Comb. | Tota | 1 | Dem. | I | Dos. | I | | Free | Comb. | | | |
| 1 İ | | 1 2.50 | | I | 1 | I | | 3 1 | | | 0.74 | | 1 | 1 | 1 | 0.66 | ì | 1 |
| 2 1 | | 2.40 | | Ť. | 1 | 1 | 1 0.3 | 8 11 | | 1 | 0.75 | 1 | Ţ. | 1 | 1 | 0.66 | T | 2 |
| 3 1 | | 1 2.60 | | Ť. | ï | í | 0.3 | 9 11 | | ı | 0.83 | 1 | Ī | 1 | 1 | 0.65 | 1 | 3 |
| 4 | | 1 2.40 | | Ť | ì | Î | 1 0.: | 3 11 | | 1 | 0.72 | i | 1 | 4 | T. | 0.65 | E | 4 |
| 5 1 | | 1 2.40 | | ì | i | i | 1 0.3 | 2 11 | | 1 | 0.73 | 1 | 1 | 4 | i | 0.67 | 1 | 5 |
| 6 1 | | 1 2.50 | | ì | i | Ï | | 2 1 | | 1 | 0.81 | 1 | 1 | T | 1 | 0.67 | Ĭ. | 6 |
| 7 1 | | 1 2.75 | | Ē | ĩ | 1 | 1 0. | 7 11 | | 1 | 0.85 | 1 | Í | T | I. | 0.66 | 1 | |
| 8 1 | | 1 2.96 | 190 | î | ì | Î | 0.3 | | | 1 | 0.92 | 1 | -1 | 1 | 1 | 0.68 | 1 | 8 |
| 9 1 | | 3.02 | | Ť. | ì | Î | 0. | 0 11 | | 1 | 0.86 | ſ | 1 | I . | 1 | 0.66 | I | 9 |
| 10 | | 3.03 | | î. | Î | í | 1 0.3 | 2 1 | | 1 | 0.99 | 1 | 1 | 1 | 1 | 0.66 | 1 | 10 |
| 11 | | 1 2.50 | | î | Ť | Ť | 0. | 5 1 1 | | 1 | 0.83 | I | 1 | 1 | L | 0.68 | 1 | 1: |
| 12 | | 1 2.50 | | ì | i | i | 1 0.3 | 7 11 | | 1 | 0.75 | 1 | I | I | 1 | 0.67 | 1 | 1: |
| 13 | | 1 2.20 | | i | j | î | 1 0.3 | 6 11 | | i | 0.73 | I | ı | 1 | 4 | 0.66 | 1 | 1: |
| 14 | | 1 2.30 | | î | ĩ | Ī | 0.: | 2 11 | | Í | 0.74 | 1 | ı | 1. | 1 | 0.65 | 1 | 1 |
| 15 I | | 1 2.80 | - | i | Î | i | 0.: | 2 1 | | i | 0.85 | 1 | Ĭ. | E. | 1 | 0.65 | ï | 1 |
| 16 I | | 2.80 | | ř | i | i | 1 0.3 | 0 1 | | Ť. | 0.83 | 1 | Ï | ī | 1 | 0.65 | 1 | 1 |
| 17 I | | 2.70 | | ì | Ť | ì | 0.3 | 2 1 | | 1 | 0.97 | Ĭ | Í | 1 | L . | 0.67 | 1 | 1 |
| 18 | | 2.60 | 010 | î | ì | i | W | 6 1 | | i | 0.81 | I. | I | 1 | 1 | 0.67 | 1 | 18 |
| 19 1 | | 2.80 | | - î | i | į. | 0. | 25 1 | | î | 0.81 | 1 | 1 | Ī | 1 | 0.67 | î. | 1 |
| 20 1 | | 1 2.50 | | i | Ě | i | | 24 | | ì | 0.80 | 1 | Î | 1 | 1 | 0.66 | 1 | 2 |
| 21 | | 1 2.50 | | î- | î | ì | (A TI | 23 | | Î | 0.76 | Î | 1 | T | 1 | 0.66 | 1 | 2 |
| 22 | | 1 2.30 | | ì | i | î | 7 | 24 | | ī | 0.76 | 1 | ĵ. | ī | t | 0.65 | î | 2: |
| 23 | | 1 2.50 | | i | i | i | 1 0. | | | i | 0.75 | | Î | 1 | Ĩ | 0.65 | Ĩ | 2: |
| 24 | | 3.10 | | i | i | 1 | 1 0. | | | 1 | 1.10 | | Î | 1 | 1 | 0.64 | 1 | 2 |
| 25 1 | | 1 2.70 | | ì | i | i | 0. | | | î | 0.84 | | 1 | 1 | I. | 0.66 | 1 | 2 |
| 26 1 | | 1 2.60 | | i | i | î | 1 0. | | V- | i | 0.81 | î | Î. | ĺ. | l | 0.67 | | 2 |
| 27 1 | | 1 2.90 | | 1 | Ê | i i | 50000 | 23 | | í | 0.93 | i | Ī | i | ī | 0.66 | 1 | 2 |
| - | | 1 2.70 | | ì | i | | | 22 1 | | i | 0.83 | ř | i | Ť | 1 | 0.66 | i | 2 |
| 28 29 | | 1 2.70 | | 1 | i | i | 0. | 6077 | | i | 0.85 | î | i | ſ | Ĩ | 0.66 | 110 | 2 |
| MARKET NA | | 1 2.70 | | i | Í | i | 1901 1-290331-2 | 21 | | i | 0.82 | î | î | î | i | 0.67 | | 3 |
| 30 31 | | 2.70 | -1 | 1 | | | | - 1 | | | 0.02 | 0. | 14 | · | Y. | | ii. | 3 |

TABLE 3.1: DISINFECTION PROFILE (JUL 1984)

| i | | | | PRE-C | HLORINATI | ON | | | | | 11 | | | | POST-C | HLOR | OITANI | N | عمر عمل المساول و | | 1 |
|-------------|------|---------|------|----------------|-----------|------|------|---------|-----|-----------------|---------|------|-----|------|---------|------|--------|----------------|-------------------|--------|------------|
| I DATE | | :12 | | | | 1 | RE | SIDUAL | C12 | | 11 | | 12 | | 1 | 1 | co2 | l R | ESIDUAL Cl | 2 | DAT |
| 1 | Dem. | | Dos. | A SELECTION OF | SO2 | 4 | Free | | | | 4 . | Dem. | | | I ИНЗ | Ţ | S02 | Free | Comb. | Total | - I - I |
| 1 I | ·· | 1 | 2.90 | I | | | | 1 | 1 | 0.21 | 11 | | I | 0.91 | Ī | | | 1 | 1 | 0.65 | Ì |
| 2 1 | | | 2.80 | Ì | i | Ť | | 1 | ľ | 0.23 | 11 | | 1 | 0.87 | 1 | 1 | | 1 | 1. | 0.65 | 1 |
| 3 1 | | | 2.50 | i I | i | Ť | | i | ì | 0.23 | 1.1 | | 1 | 0.79 | | Ī | | Í | Ĺ | 0.67 | 1 |
| 4 1 | | i. | 2.60 | ľ | i | î | | Î | î | 0.18 | 11 | | Ĺ | 0.78 | î , | i | | ì | ì | 0.66 | Î |
| 5 1 | | 1 | 2.60 | ì | j | Î | | ì | 1 | 0.16 | 11 | | 1 | 0.81 | 1 | 1 | | ł | 1 | 0.65 | 1 |
| 6 1 | | i | 3.70 | i | i | 1 | | î | 1 | 0.16 | 11 | | 1 | 1.09 | 1 | 1 | | Ĩ | j | 0.65 | 1 |
| 7 1 | | ij | 2.90 | 1 | i | i | | Î | Î | 0.15 | 11 | | Ĺ | 0.98 | Î | T. | | Ī | | 0.65 | î |
| 8 1 | | i | 3.50 | I | ì | î | | ì | i | 0.16 | 11 | | 1 | 1.07 | 1 | 1 | | 1 | 1 | 0.66 | 1 |
| 9 1 | | 100 | 2.40 | Ĺ | î | ì | | Î. | 1 | 0.17 | 11 | | Ĭ | 0.74 | ī | 1 | | 1 | ĵ. | 1 0.67 | Ī |
| 10 I | | 4 | 2.90 | i. | Ť | ĩ | | Î | Î | 0.17 | | | Î | 0.88 | 1 | | | 1 | i e | 0.65 | 1 1 |
| 11 1 | | 1 | 2.40 | l l | ì | ì | | i | ì | 0.17 | 11 | | Ĺ | 0.77 | | 1 | | Ī | T. | 0.66 | 1 1 |
| 12 | | Ť | 2.80 | i | i | i | | ì | 1 | Hart Hartest | 11 | | Ĺ | 0.91 | | i | | 1 | ĺ | 0.66 | 1 1 |
| 13 | | ì | 2.80 | t t | ĺ | î | | Ĭ | ì | 0.25 | 11 | | Ì- | 0.81 | ĺ | ĺ | | î | 1 | 0.66 | 1 |
| 14 | | 4 | 2.80 | i i | i | ì | | ì | î | 0.23 | îi | | ĺ | 0.88 | | i | | Ť | i | 0.67 | 1 1 |
| 15 | | | 3.00 | i. | ì | i | | Ĩ | i | Constitution of | 11 | | ì | 0.97 | 170 | Ê | | Î | i. | 0.68 | 1 1 |
| 16 | | 4 | 3.20 | r V | 1 | 1 | | Â | î | 0.25 | 11 | | i | 1.00 | 3 | Ť | | Î. | í | 0.66 | 1 |
| 17 | | 1 | 3.40 | 1 | i | î | | i | i | 0.27 | 220 | | ì | 1.00 | | i | | i | 1 | 0.67 | 1 1 |
| 18 | | 1 | 3.30 | i | í | ÷ | | i | ī | 0.29 | T T | | Ť | 1.20 | | î | | ï | ř | 1 0.67 | 1 1 |
| 19 | | 1 | 3.30 | 1 | i i | 1 | • | ĵe. | i | 0.37 | 1.1 | | ŀ | 1.00 | 501 | î | | Î | Í | 0.70 | 1 1 |
| 20 | | 78 | 4.30 | i. | 1 | 1 | | Î | ì | 0.37 | | | Ť | 1.40 | | i | | ì | Ĺ | 0.67 | |
| 21 | V | 1 | 2.60 | i | | į. | | i | i | 0.32 | | | Ì | 0.86 | | Ť | | ì | i | 0.68 | |
| 22 | | į. | 3.20 | 1 | Y | Ť | | ř | i | 0.33 | | | Ī | 1.10 | 3 | ì | | ì | i | 0.69 | 16 |
| - Acceptant | | 1 | 2.50 | 1 | 1 | * | | ă . | 1 | 0.32 | 200 300 | - | Ŷ | 0.79 | 100 | i | | Î | i | 0.68 | - Ai |
| 23 | | -d | 2.50 | 5 1 | Î | 4 | | f | | 0.37 | | | i | 0.84 | 400 | i | | * | i. | 0.69 | |
| 24 | | Į. | 2.50 | į. | i i | or . | | 1 | i | 0.34 | 100 | | ì | 0.85 | 1.5 | î | | Ť | 1 | 0.67 | A 19 |
| 25 | | 1 | 2.90 | th f | 1 | 14 | | 1 | ì | 0.33 | 3 | | | 0.99 | 200 | | | Ŷ. | í. | 0.66 | 100 |
| 26 | | 4 | | ļ. | 1 | | | à c | | 0.31 | 100 | | | 1.00 | | | | | i | 0.67 | 2 |
| 27 | | 1 | 3.20 | 1 | ì | 100 | | ì | 1 | 0.26 | 15 17 | | 100 | 1.10 | 1 | Ť | | î | ĩ | 0.65 | |
| 28 | | 1 | 3.40 | l . | -0- 1 | 4 | | 1 | 1 | 0.27 | | | L | 1.10 | 4 | 1 | | i | | 0.65 | 15 |
| 29 | | 1 | 3.60 | į. | 1 | | | | 1 | 0.36 | 15 50 | | | 0.90 | | | | si | ì | 0.67 | |
| 30 1 | | 9 7-1 | 2.90 | ļ | | | | t ii | 1 | | | | Ŀ | | AL D | i | | Į. | 1 | 0.65 | 150 |
| 31 1 | | 1 | 2.60 | l . | il. | 1) | | 4 | 1 | 0.31 | 1 1 | | 1 | 0.88 | d. | 1 | | d ₁ | 1 | 0.00 | 1 3 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (AUG 1984)

| I | | | | PRE-C | HLO | RINATIC | N | da Visione | | | 11 | 3 | _ | | POST-C | HLORI | NATIO | N | | | I |
|-------------|------|-----------|------|-----------|-------|---------|-------|------------|-------|------|-----|-----|-----|------|----------------|-------|-------|-------|-------------|-------|------|
| I DATE | | :12 | | | ļ | 202 | 170 | ESIDUAL | C1: | 2 | ii | | 12 | | | ļ | so2 | RE | ESIDUAL C12 | | DATE |
| j | Dem. | | Dos. | A STORES | Ì | 502 | | Comb. | | | | | | | | ì | 302 | Free | [Comb. | Total | |
| 1 1 | | 1 | 2.70 | | 1 | | I | 1 | I | 0.34 | | | ı | 0.87 | - <i></i> [| 1 | | I | . [| 0.66 | 1 1 |
| 2 i | | | 2.40 | ŀ | î | | ĺ | Ĩ | 1 | 0.32 | 11 | | Ĩ | 0.78 | 1 | 1 | | 1 | 1 | 0.67 | 1 2 |
| 3 1 | | 44.5 | 3.10 | ì | Î | | 1 | i | 1 | 0.31 | 11 | | 1 | 1.02 | 1 | 1 | | 1 | 1 | 0.66 | 1 3 |
| 4 1 | | | 3.76 | i. | Ĺ | | Î | j. | 1 | 0.29 | 11 | | . 1 | 1.24 | Í | ì | | Ì | Ī | 0.67 | 1 4 |
| 5 I | | | 4.70 | ì | 1 | | î | Ì | ı | 0.44 | 11 | | 1 | 1.43 | 1 | 1 | | 1 | I | 0.67 | 1 5 |
| 6 1 | | 10 | 3.40 | i | i | | Î | i | 1 | 0.49 | 11 | | 1 | 1.10 | 1 | 1 | | 1 | 1 | 0.70 | 1 6 |
| 7 1 | | | 2.80 | i | 1 | | 1 | 1 | 1 | 0.31 | 1.1 | | 1 | 0.81 | 1 | 1 | | 1 | 1 | 0.65 | 1 7 |
| 8 1 | | | 3.10 | i | i | | î | Ĩ | 1 | 0.34 | 1.1 | | Ī | 1.00 | ĺ | 1 | | 1 | 1 | 0.66 | 1 8 |
| 9 1 | | | 2.90 | Ì | i | | ì | Ĺ | 1 | 0.30 | 11 | | 1 | 0.91 | 1 | 1 | | 1 | 1 | 0.64 | 1 9 |
| 10 I | | | 2.70 | i | i | | i | Ĩ | 1 | 0.30 | 1.1 | | 1 | 0.90 | 1 | E | | 1 | Ī | 0.65 | 1 10 |
| 11 | | | 3.20 | r T | Ť | | i | Ť | ì | 0,24 | 1.1 | | Î | 0.95 | i | Î | | Ì | Ĩ | 0.65 | 1 11 |
| 12 | | Ť | 3.40 | į. | i | | | ì | 1 | 0.22 | 11 | | 1 | 1.20 | ť | 1 | | 1 | 1 | 0.65 | 1 13 |
| 13 I | | Ť | 3.70 | i. | Ť | | i | i | Ĺ | 0.21 | 11 | | 1 | 1.20 | ĺ | I | | 1 | i | 0.66 | 1 13 |
| 14 | | - 63 | 3.70 | Í | Ť | | í | ì | ì | 0.24 | 11 | | Ĺ | 1.30 | 1 | 1 | | 1 | i | 0.67 | 1 1 |
| 15 | | | 3,30 | i | î | | Ī | Ť | 1 | 0.30 | 11 | | 1 | 1.10 | i | ı | | Î | ı | 0.67 | 1 15 |
| 16 | | 100 | 3.10 | i | į. | | 1 | Î | 1 | 0.29 | 11 | | i | 0.98 | ı | 1 | | 1 | 1 | 0.67 | 1 10 |
| 17 | | 20 | 3.00 | i | Ĺ | | Ì | Ĩ | ì | 0.32 | 1.1 | | 1 | 0.99 | | 1 | | 1 | ì | 0.65 | 1 1 |
| 18 | | 100 | 3.10 | i | i | | 1 | Ĺ | ĺ | 0.27 | 11 | 150 | i | 0.98 | I | 1 | | Ì | Ì | 0.65 | 1 18 |
| 19 1 | | | 4.70 | fi I | ì | | ĺ | Ť | ì | 0.19 | 11 | | Ĺ | 1.50 | 1 | 1 | | 1 | ĺ | 0.64 | 1 19 |
| 20 | | 172 | 3.30 | ì | i | | Ť | Ĺ | 1 | 0.31 | 1.1 | | ſ | 1.10 | ı | 1 | | 1 | 1 | 0.66 | 1 20 |
| 21 | | | 2.90 | i | ï | | i | ř | Ť | 0.37 | 11 | | i | 0.95 | i | 1 | | ì | Ī | 0.67 | 1 21 |
| 22 | | 175 | 2.50 | i | Ê | | i | Î | 1 | 0.33 | 11 | | 1 | 0.78 | ì | ı | | Ī., | 1 | 0.72 | 1 22 |
| 23 | | | 2.70 | i | i | | į. | Î | ì | 0.34 | 11 | | Í | 0.88 | 1 | 1 | | 1 | r | 0.68 | 1 23 |
| 24 | | | 2.70 | Ï | Ť | | Î | Í | Ĩ | 0.30 | 1-1 | | 1 | 0.83 | 1 | 1 | | 1 | 1 | 0.64 | 2 |
| 25 | | 100 | 2.70 | ì | 1 | | 1 | Î | Î | 0.32 | 11 | | 1 | 0.88 | 1 | 1 | | 1 | 1 | 0.67 | 1 2 |
| 26 | | | 3.20 | î | i | | Ĩ | Î | Ī | 0.37 | 11 | | 1 | 1.10 | 1 | Ť | | Ĭ. | 1 | 0.63 | 1 20 |
| 27 | | | 2.10 | Î | i | | Ī | í | i | 0.26 | 11 | | Ť | 0.68 | 1 | i | | i | 1 | 0.63 | 1 2 |
| 28 | | 1 | 2.20 | Î. | î | | T | î | i | 0.26 | 11 | | i | 0.70 | Í | ı | | Ĭ | | 0.66 | 1 2 |
| 29 | | 1 | 2.20 | ì | Î | | Ť | 1 | 1 | 0.21 | ΙÌ | | Í | 0.68 | Î | 1 | | 1 | i. | 0.66 | 1 2 |
| 30 | | (Spinson) | 2.30 | į. | î | | i | 1 | Ì | 0.23 | 1.1 | | 1 | 0.71 | Î | 1 | | I | T | 0.67 | 1 30 |
| 31 | | 1.0 | 2.80 | į. | î | | Ť | i | i | 0.23 | 11 | | ī | 0.88 | î | î | | ĺ | i | 0.66 | 1 3 |

TABLE 3.1: DISINFECTION PROFILE (SEP 1984)

| 1 | | | | PRE-C | HLO | RINATIO | N | | | | - [| | | | POST-C | HLOR: | ITANI | ON | | | | 1 | |
|-------------|---|-------|-------|-------|-------|---------|----|--------|-----|---------------|-------|----|----|------|--------|-------|-------|-----|-----------|-------|------|---|------|
| I DATE I | | C12 | | 1 | Ī | | | SIDUAL | Cl | 2 | Ī | C | 12 | | 1 | ļ | 603 | 1 | SIDUAL Cl | | 77.0 | * | DATE |
| I I | | | Dos. | | Ì | SOZ | | | | | | | | | | | | | [Comb. | | | | |
| 1 1 | | I | 3.14 | | I | | | 1 | 1 | 0.28 | - 1 I | | 1 | 0.99 | I | 1 | | 1 | 1 | I | 0.65 | 1 | 1 |
| 2 1 | | 1 | 3.79 | ı | 1 | | Î | 1 | 1 | 0.31 | 1 | | 1 | 1.33 | Î | 1. | | 1 | 1 | i. | 0.67 | 1 | 2 |
| 3 1 | | | 2.84 | i | Î | | Ĺ | i | ı | 0.29 | 1 | | 1 | 0.88 | 1 . | T | | 1 | 1 | 1 | 0.68 | 1 | 15 |
| 4 1 | | - | 2.85 | ī | Ĩ | | ř | i | Ť | 0.29 | 1 | | 1 | 0.94 | | ı | | Ī | ı | I | 0.65 | 1 | 4 |
| 5 1 | | 1140 | 3.24 | i | ì | | Î | Î | ì | 0.30 | Ť | | ī | 1.01 | ì | 1 | | 1 | ì | 1 | 0.64 | 1 | 5 |
| 6 1 | | 1 387 | 2.37 | Î | i | | ì | 1 | Ī | | i | 7 | 1 | 0.79 | | 1 | | 1 | 1 | ſ | 0.68 | 1 | 6 |
| 7 1 | | 200 | 2.36 | Ï | i | | I | 1 | i | | 1 | | ī | 0.73 | ř. | 1 | | 1 | 1 | 1 | 0.66 | ĺ | 12 |
| 8 1 | | | 3.12 | 1 | î | | 1 | ĺ | i | 0.23 | | | i | 0.99 | 1 | I | | 1 | l. | 1 | 0.64 | 1 | 1 |
| 9 1 | | 100 | 2.80 | ì | i | | ì | i | ì | 0.23 | 1 | | Ĺ | 0.85 | 1 | 1 | | 1 | 1 | Í | 0.65 | 1 | |
| 10 i | | | 2.84 | i | î | | ì | ì | î | 0.30 | Ĥ | | 1 | 0.93 | 1 | 1 | | 1 | 1 | 1 | 0.67 | 1 | 10 |
| 11 1 | | | 2.56 | i | Ĥ | | i | ĺ | Î | 0.35 | î | | 1 | 0.82 | 1 | 1 | | 1 | 1 | 1 | 0.65 | Ĭ | 1 |
| 12 1 | | - 35 | 2.68 | i | Î | | ì | ì | i | 0.32 | 1 | | L | 0.83 | ì | 1 | | 1 | 1 | 1 | 0.72 | 1 | 1: |
| 13 i | | 2.0 | 2.64 | i | 1 | | Ī | 1 | 1 | 0.33 | 1 | | 1 | 0.83 | 1 | 1 | | 1 | i | ı | 0.83 | 1 | 13 |
| 14 i | | | 2.34 | i | Ĩ | | ī | 1 | 100 | 0.26 | Ì | | 1 | 0.74 | 1 | Ī | | 1 | l | 1 | 0.80 | 1 | 1 |
| 15 | | | 3.06 | í | î | | Î | Ì | ĩ | 0.25 | 1 | | 1 | 1.01 | £. | 1 | | 1 | 1 | 1 | 0.81 | 1 | 1 |
| 16 | | | 4.84 | i | 1 | | i | Í | î | 0.29 | 1 | | 1 | 1.31 | ſ | f | | 1 | 1 | I | 0.81 | 1 | 1 |
| 17 1 | | | 2.78 | ì | î | | 1 | Ī | ì | 0.39 | ì | | 1 | 0.83 | | 1 | | 1 | Ĭ. | 1 | 0.83 | i | 1 |
| 18 1 | | (6. | 2.53 | ì | î | | Ŷ | i | î | 0.42 | î. | | i | 0.85 | ĺ | 1 | | 1 | 1 | ı | 0.84 | 1 | 18 |
| 19 1 | 9 | | 2.48 | Î | Ť | | i | i | 1 | 0.38 | Ĩ. | | 1 | 0.75 | ĭ | 1 | | 1 | | 1 | 0.83 | 1 | 19 |
| 20 | | | 2.32 | i | 1 | | Ť | Ĩ | ī | 0.34 | 1 | | 1 | 0.75 | Î | 1 | | 1 | 1 | ı | 0.82 | 1 | 2 |
| 21 | | i | 2.61 | i | i | | ì | 1 | 1 | 0.32 | i | | 1 | 0.80 | i | 1 | | 1 | ī | 1 | 0.80 | 1 | 21 |
| 22 | | í | 2.75 | ì | i | | ì | 1 | 1 | 0.32 | i | | L | 0.86 | f | 1 | | 1 | 1 | ſ | 0.82 | 1 | 2: |
| 23 1 | | | 2.75 | ī | î | | f | i | î | 0.25 | ì | | ī | 0.88 | Î. | ı | | 1 | i | 1 | 0.83 | 1 | 23 |
| 24 | | | 2.28 | Î | i | | | 1 | i | I de l'agrica | i | | 1 | 0.76 | Í | 1 | | 1 | Î. | 1 | 0.71 | Ĩ | 24 |
| 25 1 | | 7/51 | 2.29 | i | i | | ĺ | 1 | i | 0.24 | 1 | 7 | 1 | 0.70 | Ī. | Ĺ | | 1 | 1 | 1 | 0.65 | î | 2 |
| 26 1 | | | 2.59 | î | i | | 1 | I | 1 | 0.24 | | | i | 0.83 | Î | Ť | | 1 | Ī | 1 | 0.65 | ĺ | 2 |
| 27 1 | | | 2.52 | 1 | î | | | i | i | 0.29 | i | | i | 0.78 | ì | i | | Î | i | i | 0.68 | î | 2 |
| 28 1 | | | 2.34 | ì | î | | í | ì | i | 0.29 | i | | i | 0.71 | Ì | Í | | Î | İ | 1 | 0.71 | | 21 |
| 29 1 | | | 3.14 | i | i | | i | ï | i | 32724 | ì | | i | 0.91 | Í | ī | | Ī | i | 1 | 0.76 | | 2 |
| 30 | | 117 | 2.72 | 1 | i | | i | 1 | ì | 0.26 | 30 | 96 | ì | 0.94 | Í | i | | î | 1 | 1 | 0.75 | - | 30 |
| 31 1 | | 1 | HAVOR | i | í | | į. | ì | i | | i | | ì | | î . | i | | 100 | ì | | | i | 3: |

TABLE 3.1: DISINFECTION PROFILE (OCT 1984)

| I | | | PRE-C | CHLO | RINATIO | N | | | | 11 | | | | HLORINATI | ON | | | - | | 1 | |
|-------------|-------------|------|-------|------|---------|-------|---------|-----|------|--------|-----|------|----|-----------|------|---|-----------|----|----------------|--------|----|
| I I ETAC | C12 | | | 1 | 502 | | ESIDUAL | C1: | 2 | | C12 | | 1 | 502 | | | SIDUAL CI | | مقرم ما آن جات | DAT | E |
| i | | Dos. | İ | 1 | | | Comb. | | | Dem. | | | | | - | e | [Comb. | Ĺ | Total | i 1 | |
| 1 I | I | 1.91 | | 1 | | 1 | 1 | 1 | 0.31 | 11 | 1 | 0.63 | 1 | 1 | l | | 1 | I | 0.75 | Ī | 1 |
| 2 1 | Ï | 2.76 | 1 | 1 | | 1 | J | l | 0.33 | 1.1 | 1 | 0.84 | ì | ī | 1 | | 1. | 1 | 0.75 | 1 | 2 |
| 3 1 | | 1.52 | | 1 | | Ì | 1 | 1 | 0.25 | 1.1 | 1 | 0.48 | 1 | ı | I | | 1 | 1 | 0.76 | 1 | 3 |
| 4 1 | - î | 2.20 | ì | 1 | | ľ | 1 | 1 | 0.29 | 1.1 | 1 | 0.70 | 1 | 1 | 1 | | T. | ı | 0.76 | 1 | 4 |
| 5 1 | - 60 | 2.33 | 1 | 1 | | 1 | f | 1 | 0.35 | 1.1 | 1 | 0.74 | 1 | 1 | Ī | | Ĭ . | 1 | 0.78 | 1 | 5 |
| 6 1 | | 2.42 | ì | 4 | | ì | 1 . | 1 | 0.26 | 1.1 | 1 | 0.71 | 1 | Í | 1 | | Ĭ. | 1 | 0.76 | 1 | 6 |
| 7 1 | i | 2.24 | ì | 1 | | Î | 1 | 1 | 0.27 | 11 | 1 | 0.83 | 1 | 1 | 1 | | 1 | 1 | 0.75 | 1 | - |
| 8 1 | 391 | 2.97 | î | 1 | | 1 | 1 | f | 0.27 | 1.1 | l | 0.72 | 1 | 1 | 1 | | ſ | l. | 0.76 | 1 | 8 |
| 9 1 | 1 | 2.24 | 1 | 1 | | Ĩ | ĺ | Î | 0.35 | 1.1 | 1 | 0.75 | Ĭ | 1 | 1 | | I | 1 | 0.76 | 1 | (|
| 10 | | 2,36 | î | 1 | | Ì | Ī | 1 | 0.29 | 1.1 | Ĺ | 0.67 | 1 | 1 | 1 | | 1 | 1 | 0.76 | 1 1 | 1 |
| 11 i | - 6 | 2.15 | ì | 1 | | T | ī | 1 | 0.31 | 1.1 | 1 | 0.72 | 1 | 1 | 1 | | 1 | 1 | 0.76 | 1 1 | 1: |
| 12 | | 2.39 | i | 1 | | 1 | L | 1 | 0.30 | 1.1 | 1 | 0.74 | 1 | 1 | Î | | 1 | 1 | 0.75 | 1 1 | 1: |
| 13 I | 1000 | 3.53 | Ĭ | 1 | | 1 | ĺ | 1 | 0.29 | 1.0 | 1 | 0.93 | Ī | ı | Ĩ | | T | 1 | 0.75 | 1 1 | 1: |
| 14 1 | - 2 | 2.34 | 1 | Ĩ | | Ī | 1 | 1 | 0.31 | 1.1 | 1 | 0.86 | 1 | 1 | 1 | | l. | 1 | 0.75 | 1 | 1 |
| 15 1 | | 2.15 | i | - î | | 1 | 1 | 1 | 0.31 | 1.1 | 1 | 0.67 | ì | Ī | 1 | | l: | 1 | 0.76 | 1 1 | 1 |
| 16 | 5.00 | 2.25 | i | ĺ | | I | Î | Ī | 0.21 | 11 | 1 | 0.63 | 1 | î | 1 | | 1 | 1 | 0.76 | 1 1 | 1 |
| 17 i | 1.5 | 1.88 | i | Î | | Ì | 1 | 1 | 0.34 | 11 | 1 | 0.59 | Ĭ | 1 | 1 | | 1 | 1 | 0.75 | 1 1 | 1 |
| 18 I | | 1.97 | 1 | 1 | | 1 | 1 | 1 | 0.25 | 1.1 | 1 | 0.59 | 1 | 1 | 1 | | ĵ | 1 | 0.75 | 1 1 | 18 |
| 19 I | | 2.21 | î | 1 | | Ī | 1 * | 1. | 0.31 | î î | 1 | 0.66 | Ĩ | Ī | 1 | | Î | 1 | 0.75 | 1 1 | 19 |
| 20 1 | 750 | 1.84 | i | ï | | 1 | i | ı | 0.27 | ii | 1 | 0.65 | Î. | 1 | 1 | | 1 | 1 | 0.74 | 1 2 | 20 |
| 21 | - 1 | 2.08 | í | 1 | | I | 1 | ľ | 0.24 | 1.1 | T | 0.62 | f | 1 | 1 | | 1 | 1 | 0.74 | 1 2 | 2: |
| 22 | | 2.25 | ì | 1 | | 1 | 1 | l | 0.32 | 11 | 1 | 0.80 | i | 1 | 1 | | 1 | 1 | 0.75 | 1 2 | 22 |
| 23 1 | | 2.05 | | î | | i | Ī | 1 | 0.24 | 11 | - 1 | 0.60 | Î | ì | 1 | | t | 1 | 0.75 | 1 2 | 2: |
| 24 | - 35 | 1.85 | i | Ĩ | | I | i. | 1 | 0.33 | 11 | 1 | 0.56 | ï | 1 | 1 | | 1 | 1 | 0.73 | 1 2 | 2 |
| 25 | 250 | 1.81 | 1 | Ī | | T | L | 1 | 0.38 | 1 1 | 1 | 0.55 | 1 | 1 | ı | | 1 | ĺ | 0.75 | 1 2 | 2 |
| 26 | | 1.64 | ì | i | | 1 | í | 1 | 0.31 | 1 1 | 1 | 0.52 | 1 | 1 | 1 | | ı | l | 0.77 | 1 2 | 26 |
| 27 1 | 183 | 1.88 | Î | i | | 1 | i | 1 | 0.26 | 1 1 | 1 | 0.68 | | I | 1 | | t | I | 0.75 | 7 | 2 |
| 28 1 | 3 | 2.46 | î | i | | 1 | Í | 1 | 0.32 | 11 | ſ | 0.71 | T | 1 | l | | ì | ľ | 0.77 | 1 2 | 21 |
| 29 | - 10 | 1.88 | ì | Ť | | Ï | 1 | Ī | 0.28 | | i | 0.52 | 1 | 1 | ı | | Ĭ | 1 | 0.76 | 1 2 | 2 |
| 30 | 100 | 1.71 | 1 | i | | ì | î | Î | 0.32 | 16 (6) | ì | 0.62 | 1 | Ĩ | 1 | | Ĭ. | 1 | 0.78 | 1 3 | 3 |
| 31 | | 1.82 | i | i | | 1 | Í | ī | 0.37 | - | 1 | 0.60 | Ĩ | Tre . | T. | | 1 | T | 0.78 | 1 9 | 3 |

TABLE 3.1: DISINFECTION PROFILE (NOV 1984)

| 1 | | | | PRE-C | HLC | ORINATIO | ON | | المال المال | | 11 | | /_ | | POST-C | HLORIN | ATIO | N | | | | i i | |
|-------------|------|------|------|-------|-------|----------|------|-------------------|-------------|-----------|------|---|-----|------|--|----------|------|-------|------------|---|-----------|----------|------|
| I DATE I | | c12 | | 1 | | | | SIDUAL | | | 11 | | :12 | | 1 8072 | l I S | 03 | į RI | ESIDUAL Cl | 2 | | 1 0 | DATE |
| i | Dem. | | Dos. | | 1 | 502 | Free | | | | | | | | The state of the s | | | Free | [Comb. | 1 | Total | į. 1. | |
| 1 1 | | | 1.78 | 1 | l | | 1 | T | 1 | 0.35 | 11 | | 1 | 0.52 | I | I | | 1 | I. | 1 | 0.77 | 1 | 1 |
| 2 1 | | | 1.86 | | Í | | ĵ. | j | 1 | 0.27 | 1.1 | | 1 | 0.59 | 1 | ĺ | | 1 | 1 | 1 | 0.73 | 1 | 2 |
| 3 1 | | | 1.95 | i | F | | î | ì | ĺ | 0.32 | 11 | | Ĩ | 0.69 | 1 | Ĭ | | Ĭ | i . | 1 | 0.77 | 1 | 3 |
| 4 1 | | | 2.14 | 1 | - 1 | | Ĭ. | in and the second | Î | 0.29 | 11 | | 1 | 0.52 | t | 1 | | 1 | i | 1 | 0.74 | 1 | 4 |
| 5 1 | | 20 | 1.95 | i | i | | i | 1 | I | 0.37 | 11 | | 1 | 0.53 | l | 1 | | 1 | ĺ | 1 | 0.76 | Į | 5 |
| 6 1 | | | 1.74 | 1 | i | | 1 | Ì | 1 | 0.29 | 11 | | Î | 0.60 | l | 1 | | Ĭ | E | 1 | 0.78 | 1 | 6 |
| 7 1 | | | 1.89 | i. | i | | ì | 1 | I | 0.29 | ÎĪ | | 1 | 0.55 | 1 | 1 | | 1 | 1 | 1 | 0.74 | 1 | 4 |
| 8 1 | | 2.9 | 1.72 | | i | | î | 1 | 1 | 0.25 | 11 | * | 1 | 0.57 | 1 | 1 | | I | 1 | 1 | 0.75 | 1 | 8 |
| 9 1 | | | 1.62 | | ì | | ì | Ĩ | 1 | 0.26 | 11 | | 1 | 0.50 | ĺ | 1 | | 1 | L | 1 | 0.74 | 1 | 9 |
| 10 1 | | 100 | 1.99 | 120 | i | | ì | i | 1 | 0.25 | 11 | | 1 | 0.66 | Ì | 1 | | 1 | 1 | 1 | 0.73 | T | 10 |
| 11 1 | | 200 | 2.46 | | i | | i | Í | Î | 0.29 | 11 | | Í | 0.60 | 1 | 1 | | 1 | F | 1 | 0.74 | 1 | 11 |
| 12 1 | | | 2.30 | i | i | | ì | Ĩ | 1 | 0.30 | 11 | | 1 | 0.58 | 1 | 1 | | Ì | Ĺ | 1 | 0.75 | 1 | 12 |
| 13 | | | 1.84 | ř | î | | Í | ì | ĺ | 0.33 | 11 | | 1 | 0.56 | 1 | | | ľ | Ī | 1 | 0.76 | 1 | 13 |
| 14 | | 197 | 1.64 | ì | Ť | | î | 1 | 1 | 0.34 | 1.1 | | 1 | 0.52 | 1 | 1 | | 1 | I | 1 | 0.77 | 1 | 14 |
| 15 | | - 1 | 1.56 | Ĭ | 1 | | î | Ě | Î | 0.31 | 11 | | Î | 0.46 | Ì | Í | | 1 | I | 1 | 0.72 | 1 | 15 |
| 16 | | - | 1.34 | i | - î | | Î | Î | Ī | 0.20 | 11 | | i | 0.40 | i | Ĭ. | | î . | L | 1 | 0.69 | 1 | 16 |
| 17 | | 4.0 | 1.77 | i | í | | Ĩ | 1 | Ĺ | 0.18 | 11 | | 1 | 0.60 | t | 1 | | 1 | 1 | 1 | 0.66 | 1 | 17 |
| 18 | | | 1.99 | ï | Ť | | î | Ť | 1 | 0.19 | 1.1 | | ï | 0.53 | ł | i | | 1 | 1 | 1 | 0.65 | Ī | 18 |
| 19 | | | 1.49 | i | 1 | | î | Ì | 1 | 0.23 | 1 1 | | ì | 0.43 | | Ĭ. | | Î | 1 | 1 | 0.66 | 1 | 19 |
| 20 1 | | | 1.36 | i | i | | i | 1 | ì | 0.23 | 11 | | 1 | 0.43 | I. | 1 | | 1 | I | 1 | 0.66 | 1 | 20 |
| 21 | | - | 1.53 | 1 | i | | 1 | 1 | I | 0.22 | 11 | | 1 | 0.41 | ł | 1 | | Ì | T. | 1 | 0.67 | Ì | 21 |
| 22 1 | | | 1.21 | Ī | î | | î | 1 | Î | 0.22 | 11 | | l | 0.40 | ı | l | | Ī | Ī | 1 | 0.66 | 1 | 22 |
| 23 | | | 1.41 | Ĩ | i | | Ĺ | Í | Î | 0.18 | | | Ė | 0.40 | Ì | ſ | | i | ſ | 1 | 0.67 | 1 | 23 |
| 24 1 | | - 70 | 1.57 | i | Ť | | i | 1 | i | 0.21 | | | t | 0.51 | k. | ı | | ľ | L | 1 | 0.67 | 1 | 24 |
| 25 1 | | | 1.69 | Ī | ij | | Ĭ. | Î. | Ĺ | 0.22 | M 18 | | ì | 0.51 | Į. | i | | Ĺ | i. | 1 | 0.68 | 1 | 25 |
| 26 | | 9.00 | 1.35 | ř | î | | | Î | ı | 0.21 | 11 | | i | 0.39 | | ì | | 1 | 1 | 1 | 0.67 | 1 | 26 |
| 27 1 | | 100 | 1.26 | î | - i | | Ï | Í | Î | 0.19 | 11 | | î | 0.35 | A1 | 1 | | 1 | I | 1 | 0.66 | 1 | 27 |
| 28 | | | 1.21 | ì | 1 | | Ť | i | 4 | 0.18 | 11 | | î | 0.36 | Ì | i | | 1 | 1 | | 0.67 | | 28 |
| 29 1 | | | 1.31 | ï | i | | j | Î | Ì | 0.15 | ii | | Î | 0.39 | į. | ì | | | 1 | 1 | 0.65 | | 29 |
| 30 | | | 1.36 | î | i | | Ĭ. | 4 | ï | 0.16 | 11 | | î | 0.40 | ì | î | | Ĩ | Ĩ | 1 | 0.69 | | 30 |
| 31 | | ÷ | 1.00 | 1 | i | | M. | i | ì | APAP TEST | 11 | | ř | | 1 | í | | ŀ | L | 1 | 7 187 122 | 1 | 31 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (DEC 1984)

| 1 | | | Commence of the | PRE-C | HLC | ORINATI | ON | | | | | I | l | | | POST-C | | RINATIO | ON | ترعاعات | | | | وبيونون | l | |
|--------------------|------|------------|-----------------|----------|---------|---------|-----|------|--------|---------|------|-----|----------|----|------|--------|------|---------|-----|---------|-----|-----------|-----|---------|---------------|-----|
| DATE | 97 | :12 | | 1 | 1 | | ı | | SIDUAL | Cl | 2 | 1 | cl | | | MA3 | ļ | 502 | 1 | R | ES: | IDUAL C12 | ! | | DI | ATE |
| 1 | Dem. | | Dos. | i | Î | | Î | Free | Comb. | | | | Dem. | | | | 1,00 | 302 | l F | ree | 1 | Comb. | [[| Total | Ì | |
| 1 | | . – . I | 1.23 | | 1 | | | |) | I | 0.15 | 1 | | l | 0.44 | l | ı | | 1 | | 1 | J | ı | 0.65 | i L | 1 |
| 2 1 | | 1177 | 2.56 | | 1 | | 1 | | i | 1 | 0.16 | 1 | i i | 1 | 0.52 | Ĭ. | 1 | | 1 | | - 1 | | | 0.66 | ſ | 2 |
| 3 1 | | 12 | 1.49 | ì | 1 | | 1 | | L | 1 | 0.19 | 1 | i i | L | 0.41 | f | - 1 | | I | | 1 | Í | Ĕ. | 0.67 | 1 | 3 |
| 4 1 | | | 1.25 | i | 1 | | Ĩ | | Î | 1 | 0.17 | i | i i | 1 | 0.38 | 1 | 1 | | ľ | | - 1 | 1 | ť. | 0.66 | 1 | 4 |
| 5 1 | | | 1.49 | i | i | | ì | | i | i | 0.14 | 1 | | ı | 0.40 | Ĭ | 1 | | I | | 1 | 1 | Ĺ | 0.64 | 1 | 5 |
| 6 1 | | - | 1.27 | i | Ī | | i | | ì | 1 | 0.15 | j. | ĺ | 1 | 0.38 | 1 | 1 | | 1 | | 1 | j | Ĺ | 0.65 | 1 | 6 |
| 7 1 | | | 1.43 | Ď. | i | | i | | i | 1 | 0.15 | 1 | L | í | 0.42 | 1 | 1 | | I | | 1 | 1 | ŧ. | 0.67 | I. | 7 |
| 8 1 | | | 1.41 | i i | î | | í | | i | ī | 0.15 | i | | 1 | 0.47 | Ì | 1 | | ì | | I | 1 | 1 | 0.65 | 1 | 8 |
| 9 1 | | 100 | 2.14 | ì | Ť | | Ť | | ì | ì | 0.18 | i | i i | 1 | 0.47 | Ì | 1 | | 1 | | - 1 | | 1 | 0.66 | Ĩ | 9 |
| 10 | | 100 | 1.07 | İ | i | | í | | i | i | 0.16 | 4 | i i | ï | 0.30 | i | Ĩ | | ı | | 1 | 1 | 1 | 0.67 | 1 | 10 |
| 11 | | - 2 | 1.33 | i | 1 | | i | | T. | 1 | 0.15 | i | ĺ | i | 0.37 | ì | 1 | | 1 | | 1 | 1 | 1 | 0.66 | E | 11 |
| 12 | | | 1.31 | 1 | ng | | | | Ŷ. | ì | 0.17 | i | 1 | 1 | 0.37 | i | 1 | | 1 | | 1 | 1 | 1 | 0.67 | 1 | 12 |
| 13 | | | 1.23 | 1 | | | i | | | Ť | 0.16 | i | P. 1 | 1 | 0.35 | į. | ì | | Ī | | î | Î | ĺ | 0.66 | 1 | 13 |
| 14 | | 100 | 1.24 | i . | 4 | | 1 | | Ŷ | ì | 0.17 | | | i | 0.36 | 1 | ì | | î | | 1 | | i | 0.67 | Ĺ | 14 |
| 15 | | 100 | 1.73 | 1 | - 1 | | 1 | | 1 | i | 0.16 | ì | 5 | i | 0.46 | i i | i | | ì | | ī | | Ĺ | 0.67 | f | 15 |
| -31114/1977 (1.18) | | | 1.38 | 4 | ı, | | 1 | | ŀ | i. | 0.15 | ì | | | 0.38 | | Ť | | i | | i | | ĺ | 0.66 | 1 | 16 |
| 16 | | - | 1.34 | ł. | 1 | | 1 | | ì | 1 | 0.14 | 1 | | i | 0.41 | | î | | i | | i | i | i | 0.66 | l | 17 |
| 17 | | 35 | 1.62 | 1 | 1 | | 1 | | | 1 | 0.17 | | | i | 0.47 | 8 | i | | i | | i | 1 | Ł | 0.65 | ì | 18 |
| 18 | | | 1.19 | 126 | | | i | | i | | 0.16 | i | i | ì | 0.38 | Ē. | i | | î | | i | į | ì | 0.66 | i · | 19 |
| 19 | | | | <u> </u> | 1 | | | | ř | Ť | 0.16 | i | 1 | i. | 0.40 | T. | ÷ | | î | | i | / | i | 0.66 | -5 | 20 |
| 20 | | 7355 | 1.47 | 1 | 4 | | 1 | | J. | 100 | 0.18 | | <u>.</u> | ì | 0.33 | | P | | Î | | i | j | ř | 0.67 | - | 21 |
| 21 | | | 1.18 | alt. | di 1 | | | | 1 | 8. | 0.17 | i | | | 0.32 | í | ì | | í | | i | Ī | í | 0.66 | 30 <u>0</u> 1 | 22 |
| 22 | | | 0.88 | 1 | | | | | 1 | ŀ | 0.15 | i | ar . | ï | 0.45 | i i | F | | ì | | î | | ì | 0.65 | 1.5 | 23 |
| 23 | | | 1.43 | 1 | 1 | | 1 | | 1 | • | 0.13 | | L . | 1 | 0.43 | | 1 | | | | i | | ì | 0.65 | 150 | 24 |
| 24 | | | 1.21 | 1 | 1 | | 1 | | 1 | 1 | 0.14 | - 2 | | 1 | 0.48 | - | 4 | | Æ. | | ì | | i | 0.66 | | 25 |
| 25 | | 1281 | 1.15 | 1 | 1 | | 1 | | 1 | 1 | 0.14 | | | ľ | 0.39 | | 1 | | 1 | | - 1 | | 1 | 0.64 | | 26 |
| 26 | | 12. | 1.53 | 1 | 1 | | l P | | T. | de T | | | | 1 | | 155 | - 0 | | 1 | | i | | 1 | 0.66 | - | 27 |
| 27 | | 177 | 0.98 | A | - 1 | | 1 | | | 1 | 0.16 | | 10 | I. | 0.36 | 100 | - 1 | | Ť | | 1 | | 1 | 0.67 | - | 28 |
| 28 | | 0.53 | 1.39 | 1 | ı, | | 1 | | 1 | ! | 0.19 | i | 8 | 1 | 0.31 | RT. | 1 | | 1 | | 1 | | 1 | 0.66 | 1.00 | 29 |
| 29 | | 151 | 1.06 | 1 | 1 | | | | | Į. | 0.16 | 1 | 91 | 1 | 0.40 | | I. | | E. | | | | | 0.66 | -80 | 30 |
| 30 | | | 1.44 | I | 1 | | - 1 | | Ţ | T | 0.14 | 1 | 1.0 | ŀ | 0.36 | 171 | T. | | | | 1 | <i>f</i> | 1 | | 200 | |
| 31 | | I | 0.88 | J. | Ì | | 1 | | 1 | 1 | 0.16 | | 1 | 1 | 0.32 | 1 | 1 | | 1 | | I | N. | l. | 0.66 | 1 | 31 |

TABLE 3.1: DISINFECTION PROFILE (JAN 1985)

| ı | | | PRE-C | CHLC | RINATIO | N | | diameter (| | | 11 | | | | POST-C | HLORINAT | ION | | | | | 1 |
|--------|-----------|------|-------------|-------|---------|-----|------------|------------|----|-------|-----|----|----|------|------------|-----------|-----|------|-----------|----|-------|------|
| DATE I | c12 | | 1 | ! | | ļ | RES | IDUAL | C1 | 2 | | | 12 | | I I NH3 | S02 | 1 | Ri | ESIDUAL C | 12 | | DATE |
| 1 | | Dos. | - NH3 | I | 502 | Fre | ee | Comb. | ī | Total | | | | Dos. | St. | 1 302 | 6.7 | Free | Comb. | Ī | Total | į |
| 1 1 | I | 1.30 | | 1 | | 1 | ineni j | [| 1 | 0.17 | 1.1 | , | 1 | 0.36 | L | 1 | 1 | | Í | J | 0.68 | 1 |
| 2 | | 1.22 | | 1 | | 1 | į. | ı | 1 | 0.14 | 1.1 | | 1 | 0.33 | 1 | ĺ | 1 | | 1 | 1 | 0.66 | 1 2 |
| 3 1 | (\$7) | 1.12 | 200 | 1 | | Į | | Ĭ | T | 0.15 | 1.1 | | Ī | 0.37 | 1 | J. | 1 | | £ . | 1 | 0.66 | 1 3 |
| 4 1 | | 1.20 | | 1 | | 1 | | 1 | 1 | 0.17 | 11 | 10 | 1 | 0.33 | Ĩ. | L | 1 | | 1 | 1 | 0.66 |] 4 |
| 5 1 | | 1.14 | î | I | | 1 | | ĺ | 1 | 0.16 | 11 | | Ì | 0.39 | 1 | Î | ĺ | | Ĭ | l | 0.66 | 1 5 |
| 6 | 200 | 1.25 | Î | ì | | Î | | ĺ | 1 | 0.15 | 1.1 | | Ī | 0.42 | 1 | 1 | 1 | | 1 | 1 | 0.64 | 1 6 |
| 7 1 | | 1.24 | i | 1 | | 1 | j | I | T | 0.16 | 11 | | 1 | 0.34 | 1 | 1 | 1 | | Ī | ŧ | 0.64 | 1 7 |
| 8 1 | | 1.19 | î | 1 | | Ĩ | | ĺ | i | 0.17 | 11 | | 1 | 0.37 | 1 | Ī | 1 | | Î | 1 | 0.66 | 1 8 |
| 9 1 | | 1.19 | 9 | î | | í | 9 | | ì | 0.18 | 11 | | 1 | 0.34 | 1 | 1 | 1 | | 1 | 1 | 0.67 | 1 9 |
| 10 | 200 | 1.09 | ì | i | | ì | | Ĺ | î | 0.17 | 11 | | 1 | 0.34 | T | î | 1 | | Ĩ | 1 | 0.67 | 1 10 |
| 11 1 | 1,400 | 1.13 | î | ï | | ì | | 1 | 0 | 0.17 | ΪÌ | | ì | 0.31 | ì | ì | 1 | | ì | 1 | 0.66 | 1 11 |
| 12 1 | | 1.13 | -1 | i | | Ĭ | | Ì | Č. | 0.19 | Ĥ | | i | 0.38 | Ì | Ì | i | | T | 1 | 0.66 | 1 12 |
| 13 1 | | 1.20 | ů. | f | | 1 | | i. | ì | 0.18 | 1.1 | | 1 | 0.37 | Ī | Ĭ. | î | | ĩ | ŧ | 0.67 | 13 |
| 14 | | 1.10 | ì | İ | | i | | i | ì | 0.18 | ΪÍ | | Î | 0.31 | Ì | Ì | j | | Ĭ. | 1 | 0.64 | 1 14 |
| 15 i | 1 | 0.97 | ľ | T. | | 1 | | 1 | 1 | 0.18 | 11 | | ì | 0.30 | I | 1 | - 1 | | ì | ı | 0.67 | 1 15 |
| 16 I | - | 1.14 | | 1 | | 1 | 3 | Ĭ. | 1 | 0.17 | 1.1 | | 1 | 0.31 | 1 | I | 4 | | 1 | 1 | 0.67 | 1 16 |
| 17 | -373 | 1.05 | ì | 1 | | 1 | | f | 1 | 0.19 | 11 | | 1 | 0.34 | 1 | 1 | ţ | | 1 | 1 | 0.68 | 1 17 |
| 18 | 1 | 0.91 | Ĩ | 1 | | 1 | | 1 | Ĩ | 0.19 | 11 | | ĺ | 0.26 | Î | 1 | 1 | | Ì | 1 | 0.66 | 1 18 |
| 19 | 1 | 0.96 | ì | ĺ | | 1 | | ĺ | 1 | 0.18 | 1 1 | | 1 | 0.34 | 1 | 1 | 1 | | 1 | 1 | 0.66 | 1 19 |
| 20 1 | i | 0.96 | ì | Ī | | 1 | | 1 | Ī | 0.17 | 11 | | F | 0.35 | 1 | 1 | 1 | | 1 | 1 | 0.64 | 20 |
| 21 1 | i | 0.87 | î | 1 | | 1 | | i | Ī | 0.18 | 1.1 | | 1 | 0.27 | -Î | Î | 1 | | i . | 1 | 0.66 | 1 21 |
| 22 | 1 | 1.05 | | Í | | Ì | ĝ | į. | 1 | 0.17 | 11 | | 1 | 0.31 | 1 | Ĺ | ı | | 1 | 1 | 0.66 | 1 22 |
| 23 | 120 | 1.01 | Î | i | | 1 | 1 | 1 | 1 | 0.17 | 1.1 | | 1 | 0.31 | 1 | I. | . 1 | | 1 | 1 | 0.67 | 23 |
| 24 | ř | 0.92 | | i | | 1 | j | ı | ĩ | 0.19 | ΙÌ | | 1 | 0.28 | Ĭ | Î | 1 | | 1 | 1 | 0.66 | 1 24 |
| 25 1 | i | 0.95 | | î | | Ì | | Į. | 1 | 0.18 | ìi | | î | 0.26 | į. | Ĺ | i | | Ĭ | 1 | 0.67 | 25 |
| 26 | | 0.96 | (2) | i | | i | | Í. | 1 | | 11 | | ì | 0.33 | 4 | 1 | 1 | | 1 | 1 | 0.66 | |
| 27 1 | 1.50 | 0.87 | | ì | | î | | F | Ť | 0.18 | 11 | | i | 0.32 | ì | Í | İ | | ì | i | 0.66 | 35° |
| 28 1 | 1 | 0.93 | | i | | i | | Ì | 5 | 0.19 | i | | î | 0.30 | Í | i | ì | | ř | i | 0.67 | 120 |
| 29 1 | ì | 1.04 | - 75 | | | i | | i | i | 0.18 | ii | | i | 0.32 | ì | i | ı | | Í | 1 | 0.67 | 1 29 |
| 30 | - 1 | 0.99 | | 1 | | i | | ľ | î | 0.17 | 11 | | i | 0.29 | Î | î | 1 | | Î | ì | 0,67 | 30 |
| 31 | 1 | 1.00 | | E | | i | | Í | 3 | 0.18 | 100 | | î | 0.29 | Ŷ | i | i | | Î | i | 0.66 | 31 |
| 21 | E | 1.00 | L. | | | 1 | المنسية | | 1 | 0,10 | | | ٠. | 0,23 | ٠ | | | | | | | |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (FEB 1985)

| 1 | | | | HLORINAT | | | | | 1 | l | Section 1 | | 110000000000000000000000000000000000000 | CHLORINAT | ION | | | I- | |
|-----------|------|------|------|--------------|-------|------|--------|-------|---------|----------------|-----------|------|---|--------------|------|-------------|-------|------|----|
| I DATE | cl | 2 | Ī | 1 | ï | RE | SIDUAL | C12 | i | i c | 12 | | 1 | 1 | | ESIDUAL C12 | | I DA | TE |
| 1 | Dem. | | 1 | SO2 | 1 | Free | Comb. | Tota | al | Dem. | 1 | Dos. | Ì | 502 | Free | Comb. | | | |
| 1 (| | 0.97 | | 1 | I | | 1 | 1 0. | 1 | | | 0.27 | | 1 | 1 | 1 | 0.66 | L | 1 |
| 2 1 | | 0.99 | 1 | 1 | 1 | | 1 | 1 0. | 19 | l. | 1 | 0.35 | 1 | Î | 4 | 1 1 | 0.67 | 1 | 2 |
| 3 1 | | 0.96 | 1 | 1 | Ĩ | | 1 | 1 0. | 20 | Ĭ- | 1 | 0.29 | Ĭ | l | 1 | T 3 | 0.66 | 1 | 3 |
| 4 1 | 1 | 0.92 | ì | Ī | 1 | | 1 | 1 0. | 20 | 1 | 1 | 0.28 | 1 | 1. | 1 | 1 1 | 0.67 | T. | 4 |
| 5 1 | i | 1.02 | Ī | 1 | 1 | | f | 0. | 19 | I | 1 | 0.30 | 1 | Ĩ | 1 | 1 | 0.67 | l | 5 |
| 6 1 | 1 | 0.87 | i | Î | Î | | 1 | 1 0. | 19 | 1 | T | 0.27 | 1 | Ĺ | 1 | 1 1 | 0.65 | 1 | 6 |
| 7 i | | 0.95 | 1.00 | ì | Ì | | 1 | 1 0. | 17 | Ī. | ĵ. | 0.30 | 1 | 1 | 1 | 1. 1 | 0.66 | 1 | 1 |
| 8 1 | | 1.02 | | ì | i | | i | 0. | 16 | Í. | 1 | 0.27 | 1 | 1 | 1 | Ī | 0.66 | 1 | 8 |
| 9 1 | | 1.01 | | i | Ĩ | | ī | 1 0. | 18 | L | 1 | 0.34 | 1 | Ĩ | l | 1 1 | 0.66 | 1 | 9 |
| 10 1 | | 0.84 | | Î | ì | | ì | 1 0. | 17 | ľ | 1 | 0.32 | 1 | 1 | 1 | 1 3 | 0.66 | 1 | 10 |
| 11 i | | 0.92 | | i | i | | î- | 1 0. | | | 1 | 0.26 | 1 | 1 | 1 | 1 | 0.66 | L. | 1 |
| 12 | | 0.98 | | ì | Ĺ | | Î | 1 0. | 18 | Ī | 1 | 0.30 | Í | 1 | 1 | 1 | 0.65 | 1 | 1: |
| 13 I | 17 | 0.89 | | ĺ | ì | | Î. | 1 0. | 19 | 1 | 1 | 0.30 | 1 | ì | 1 | I. | 0.66 | 1. | 1 |
| 14 i | 7 | 1.10 | | i | i | | i | 1 0. | 19 | Ī | 1 | 0.31 | 1 | T | 1 | 1 | 0.66 | 1 | 1 |
| 15 | | 1.09 | | i | i | | ř | 1 0. | 18 | Î. | 1 | 0.31 | 1 | 1 | j | ĺ | 0.67 | 1 | 1 |
| 16 | | 0.81 | | î | i | | 1 | 1 0. | 17 | 1 | Î | 0.29 | I | 1 | 1 | Ī | 0.66 | i . | 1 |
| 17 | | 0.84 | | ì | ì | | ì | 1 0. | | F | 1 | 0.32 | 1 | 1. | 1 | 1 | 0.66 | 1 | 1 |
| 18 | | 1.00 | | i | i | | i | 1 0. | 19 | Î. | Ť | 0.29 | ī | î. | 1 | Ĩ | 0.66 | 1 | 1 |
| 19 | | 0.83 | | Ť | î | | ì | 1 0. | 1100 | Ī | Ť | 0.32 | Î | 1 . | -1 | i i | 0.64 | T : | 1 |
| 20 1 | | 0.92 | | î | Ş. | | ì | 1 0. | 21 | i | Ĭ. | 0.25 | İ | r | T | 1 1 | 0.64 | 1. | 21 |
| 21 | | 0.83 | | i | î | | Ì | 1 0. | | 1 | 1 | 0.27 | 1 | 1 | 1 | 1 | 0.65 | 1 | 2 |
| 22 | | 0.92 | | Ĺ | î | | Ĩ | 35 | 19 | Ī | Ĺ | 0.25 | 1 | À | î | ì | 0.65 | ì | 2: |
| 23 1 | | 0.91 | | 1 | i | 7 | i | 1 0. | 3000 30 | 1 | Î | 0.28 | 0.0 | 1 | 1 | 1 | 0.66 | 1 | 2: |
| 24 1 | | 0.74 | | i | 1 | | 1 | 1 0. | | Î | 1 | 0.30 | | 1 | ſ | Í | 0.66 | 1 | 2 |
| 25 | | 0.99 | | i | i | | i | 1 0. | | Î. | Ī | 0.29 | - | i | i | | 0.66 | | 2 |
| 26 | | 0.88 | - | 1 | i | | Ì | 77.12 | 19 | i ² | ı | 0.24 | | i. | ſ | 1 | 0.64 | 1 | 2 |
| 27 | | 0.87 | | Î | i | | ì | 1 0. | | 1 | i | 0.27 | .26 | i | i | i. | 0.64 | | 2 |
| 28 | | 0.96 | 1.0 | i | i | | i | | 20 | I.#17 | i | 0.28 | ì | i | Ť | I . | 0.66 | | 21 |
| 29 1 | | 0.50 | Ĭ | 1 | - 1 | | 1 | 1 | 1 | i | i | | î | u.Ku | i | i : | ALP T | 3 | 2 |
| 30 | | ĺ | 1 | î | - 1 | | 1 | Î | i | i | ì | | Î | î. | i | í | | ñ | 3 |
| 31 | | l: | i i | i i | 4 | | ÷ | | | 1 | | | 1 | i. | - | i i | | | 3 |

TABLE 3.1: DISINFECTION PROFILE (MAR 1985)

| 1 | | | PRE-C | HLORINATIO | ON | | |] | 1 | -00-01- | | POST-CH | LORINAT | 'ION | | | 1 |
|--------|------|--------|---------|------------|--------|---------|---------------|-------|----------|---------|------|-------------|---------|--------|-----------------|-------|-----------------|
| DATE I | C1 | | 1 | l I 502 | | ESIDUAL | C12 | ĺ | | 212 | | Mu2 | I 502 | | RESIDUAL C1 | 2 | DAT |
| Ì | Dem. | | | 1 502 | (a, •) | | | | Dem. | | | E. Swellman | 1 302 | | e Comb. | Total | İ |
| 1 1 | | 0.85 | 1 | i | | 1 | 1 0 | .19 | l seeses | ı | 0.28 | T | 1 | l | Î | 0.64 | 1 |
| 2 1 | | 0.88 | Ī | Ī | 1 | 1 | 1 0 | .17 | 1 | 1 | 0.32 | I | 1 | 1 | ľ | 0.64 | 1 |
| 3 | | 0.96 | | Í | 1 | 1 | 1 0 | .17 | 1 | 1 | 0.37 | F | 1 | Ĺ | ì | 0.66 | 1 |
| 4 1 | | 1.04 | | î | i | 1 | 1 0 | .17 | Î | 1 | 0.33 | 1 | I | i | Ĺ | 0.69 | 1 |
| 5 | | 1 1.14 | | Ĭ. | I | i | 1 0 | .20 | 1 | 1 | 0.34 | 1: | 1 | 1 | 1 | 0.67 | 1 |
| 6 1 | | 0.97 | 7 | Ē | 1 | 1 | 1 0 | .24 | 1 | 1 | 0.27 | | I | 1 | Ì | 0.67 | 1 |
| 7 1 | 2 | 0.92 | | Î | Ĭ | 9 | 1 0 | .20 [| Ĭ | 1 | 0.30 | Î | Ī | I | Ì | 0.65 | 1 |
| 8 1 | | 0.90 | Í | Ĺ | Ĭ. | Ì | | .18 | | 1 | 0.26 | i | i. | I | ľ | 0.65 | |
| 9 1 | - | 0.91 | Î | 1 | Ī | i | 1000 | .18 [| 100 | ĺ | 0.33 | 1 | 1 | 1 | 1 | 0.64 | 1 |
| 10 i | | 0.82 | 7 | Î | Ĩ | i i | 1 0 | .16 [| i | i | 0.32 | i | i | ì | Î | 0.65 | 1 1 |
| 11 1 | | 0.90 | i i | Î | Ť | Ì | 1 0 | .18 (| ì | 1 | 0.28 | Ĩ | ì | Ť | | 0.65 | 1 1 |
| 12 | | 1.08 | ì | î | ï | î : | 1 0 | .17 (| ì | Ť | 0.30 | ī | Ĩ | Ĩ | 1 | 0.67 | 1 1 |
| 13 1 | | 1.13 | Ψ. | Ĩ | Ĩ | | 1 0 | .14 | Î | î | 0.36 | ì | i | ì | 100 | 0.67 | 1 1 |
| 14 1 | | 1.21 | Ď. | Ì | ì | i : | | .16 (| | Ī | 0.37 | 1 | î | Ĭ | E | 0.67 | 1 1 |
| 15 | Į. | 1.17 | i | ì | i | ì | | .16 j | 100 | i | 0.34 | 100 | î | i | ì | 0.67 | 100 |
| 16 | 00 | 0.97 | 4 | ì | î · | ì | 200 | .16 | 10 | Ť | 0.35 | Ŷ | î | î | * 1 | 0.66 | i 1 |
| 17 1 | ā a | 1.45 | į. | ì | i | ì | 3 | .17 i | 3) | i | 0.40 | ì | ì | i | i | 0.67 | 1.0 |
| 18 | 9 | 1.14 | i i | Ť | i | ř | 2 TOTAL | .16 | 155 | i | 0.34 | î | Ť | î | i | 0.67 | 80 |
| 19 | | 1.21 | -0 | 1 32 | û | ì | * 00 | .15 i | 171 | i | 0.34 | Î | ì | î | 2 | 0.68 | 187 |
| 20 1 | | 1.21 | Í | Í | ì | ì | Si sa | .16 | - 20 | i | 0.37 | i | 1 | i | ì | 0.66 | |
| 21 | | 1.14 | i | i | i | ì | in the same | ,15 I | 3 | i | 0.37 | Î | Ĭ | I | ŕ | 0.67 | THE STREET |
| 22 | | 1.25 | Ť | T. | ï | Ť | | .17 | 7.50 | 1 | 0.37 | i i | 1 | ř | i i | 0.67 | |
| 23 | | 1.06 | Ť | Î | i | # | 1 | .18 | 8 | i | 0.38 | 7 | Ē | Î | Ġ. | 0.67 | The contract of |
| 24 1 | | 1.11 | Î | i | i | i i | | .15 | 3. | i | 0.38 | (12) | ì | T . | i | 0.68 | 10.00 |
| 25 | | 1.20 | 1 | 141 | · | r | | .19 | 101 | 1 | 0.33 | - | 1 | ì | 100 | 0.67 | 100 |
| 26 1 | | 1.18 | i. | Ť | i | i i | | .18 | 10.0 | ì | 0.36 | į. | Ť | 4 | 164 | 0.67 | - |
| 77 | 1 | 1.15 | ÷ | | į. | | | .17 | | | 0.39 | 1 | 5 | 100 | ř | 0.66 | 170 |
| 27 | | | la V | i. | L I | 1 | | .17 1 | 080 | 1 | 0.34 | 1 | Al . | , E, | 7 1 | 0.66 | 199 |
| 28 | 1 | 1.14 | ± | 1 | 1 | 98 | 3 | .20 1 | 20 | 1 | 0.44 | 1 | At 1 | 1 | | 0.65 | |
| 29 | | 1.37 | | | i i | S. | 18 | .20 1 | 1 | | | 1 | 1 | | 1 | 0.67 | |
| 30 | | 1.61 | | i. | i. | 4 | in the second | 1. | 1 | -t | 0.46 | 100 | i c | h Y | | • | 140 |
| 31 | | 1.65 | ob. | T. | 4. | * | 1 0 | .21 | 1 | 1 | 0.37 | Ł | i. | Ţ. | ar and a second | 0.66 | 1 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (APR 1985)

| ·I | | | | | HLORINATIO | ON | uti seriesininin | Name of the | | 11 | | | | POST-C | HLORINAT | ON | | | 1 |
|------------|------|-------|------|----------|------------|------|------------------|-------------|------|------|-----|-----|------|--------|----------|------|-------------|-------|--------|
| I DATE | | c12 | ! | l | SO2 | | ESIDUAL | C1. | 2 | 11 | (| 012 | | 1 | 1 502 | į RI | ESIDUAL C12 | | DATE |
| | Dem. | | | İ | S02 | Free | Comb. | | | | | | | | | Free | Comb. | Total | i I |
| 1 | | I | 1.06 | | I | I | 1 | 1 | 0.18 | 11 | | L | 0.39 | 1 | ı | 1 | ļ | 0.67 | |
| 2 | | 1 | 1.48 | ĺ | Í | Ť. | 1. | i | 0.19 | 1.1 | | 1 | 0.53 | į. | 1 | Ì | 1 | 0.65 | 1 2 |
| 3 1 | | | 1.38 | í | i | 1 | 1 | I | 0.23 | 11 | | 1 | 0.43 | 1 | I | 1 | 1 1 | 0.68 | 1 3 |
| 4 1 | | - 3 | 1.02 | 1 | ì | Î | i | ſ | 0.23 | 1.1 | | 1 | 0.31 | 1 | 1 | 1 | T J | 0.66 | 1 4 |
| 5 1 | | 10.00 | 0.98 | i | Î | ì | 1 | ı | 0.17 | 1.1 | | 1 | 0.31 | 1 | Ī | 1 | T I | 0.64 | 1 : |
| 6 1 | | 0.00 | 1.09 | i | i | 1 | 1 | Ī | 0.17 | 1.1 | | 1 | 0.33 | 1 | 1 | Î | 1 1 | 0.66 | 1 (|
| 7 1 | | 950 | 1.18 | Ĭ | Î | Î | 1 | 1 | 0.25 | 11 | | 1 | 0.42 | 1 | ì | 1 | 1 1 | 0.66 | 1 5 |
| 8 1 | | - 7 | 1.70 | i | Î | ì | 1 | 1 | 0.18 | 1.1 | | 1 | 0.49 | 1: | 1 | 1 | Ĭ. | 0.65 | 1 1 |
| 9 1 | | - | 1.83 | ŕ | î | i i | 1 | I | 0.22 | 1.1 | .*: | 1 | 0.51 | 1 | 1 | i | - j | 0.68 | 1 9 |
| 10 | | | 1.57 | ì | ì | ì | î | i | 0.21 | 11 | | 1 | 0.50 | Ì | I | 1 | | 0.68 | 1 10 |
| 11 | | 1 | 1.21 | ì | ì | È | i | ĺ | 0.21 | 11 | | 1 | 0.38 | 1 | 1 | Ĭ. | i i | 0.66 | 1 1 |
| 12 | | | 2.08 | i | i | i | Ě | i | 0.18 | ΪΪ | | 1 | 0.55 | 1 | Ī | Î | 1 | 0.66 | 1 1: |
| 13 | | | 1.98 | ì | i | j. | i | i | 0.17 | 11 | | 1 | 0.64 | l . | ì | ı | Ť i | 0.67 | 1 13 |
| 14 | | 100 | 2.66 | î | Î | į. | ì | i | 0.19 | 11 | | 1 | 0.80 | Î | ì | Ĩ | 1 1 | 0.68 | 1 1 |
| 15 I | | 12. | 1.83 | i | i | Ť | i | i | | 1.1 | | 1 | 0.53 | ĩ | ı | ì | | 0.68 | 1 1 |
| 16 | | | 2.07 | ì | ì | î. | Î | ì | 0.22 | 11 | | 1 | 0.67 | î | i | ì | 1 | 0.67 | 1 1 |
| 17 | | (20) | 1.93 | ì | i | ì | i | Î | 0.21 | | | i | 0.54 | Ĺ | i | î | i i | 0.66 | 1 1 |
| 18 | | - 2 | 1.76 | <u>,</u> | î | i | ï | ï | 0.23 | | | Ť | 0.57 | 17 | i | i | i i | 0.68 | 1 1 |
| 19 | | - | 1.79 | i | i i | ř | ì | ř | 0.22 | 100 | 4. | i | 0.58 | 17 | i | î | i I | 0.68 | 1 1 |
| 20 1 | | | 1.82 | 1 | i | i i | 1 | ř | 0.19 | | | î | 0.57 | 14.0 | ī | i | i | 0.68 | 1 2 |
| 20 I | | 100 | 2.09 | ì | į | ÷ | ė. | i | 0.16 | | | i | 0.53 | | i | i | Î i | 0.67 | 100 |
| 22 | | - | 1.81 | 1 | 1 | î | î | ì | 0.24 | | | ï | 0.57 | 175 | į | i | 1 | 0.73 | 975 |
| | | | 1.81 | 1 | 1 | î | 1 | ì | 0.22 | 13 8 | | í | 0.54 | | i | i | i | 0.78 | 1.00 |
| 23 24 | | 1.50 | 1.98 | 1 | i | | i | i | 0.20 | îέ | | í | 0.63 | | i | i | i | 0.75 | 7.00 |
| 25 1 | | 68 | 2.04 | 4 | h. | í | Ť | î | 0.22 | 4.1 | | î | 0.60 | 150 | î | i | ï | 0.75 | (TV) |
| | | | 1.56 | 1 | 1 | Ť | ì | Ť | 0.23 | 11 | | ì | 0.47 | | î | i | i | 0.74 | 72 |
| 26 | | | 1.95 | 1 | 1 | | ì | į. | 0.20 | 11 | | ì | 0.62 | | i | i | i | 0.70 | 1141 |
| 27 | | | | 1 | i | i | 1 | ÷ | | 1.1 | | 1 | 0.54 | 1.4.1 | i | í | i | 0.67 | 1000 |
| 28 | | - 6 | 1.77 | i. | i. | i i | 1 | 4 | 0.19 | 3. | | 1 | 0.55 | 121 | 1 | i | 1 | 0.66 | |
| 29 | | | 1.84 | 1 | 1 | 1 | 1 | 4 | 0.19 | 10.0 | | | 0.51 | | į. | | ì | 0.67 | |
| 30 | | 1 | 1.68 | 1 | 1 | į. | l l | ì | 0.19 | 1 1 | | Ţ | 0.51 | 1 | i | i | i | 1 | 1 3 |
| 31 | | - 1 | | 1 | 1 | 1 | 1 | ıl. | | 1 1 | | 1 | | 1 | 1 | | į. | 1 | , , |

TABLE 3.1: DISINFECTION PROFILE (MAY 1985)

| . 1 | | | | MT-34- | HLORINAT | | | | | 11 | | | POST-C | HLORINA | TION | | | <u> </u> | 1 |
|------|------|------|------|-------------|-----------|-----|---------|-----|------|---------|-----|------|--------|-----------|------|------|-----------|----------|---------|
| ATE | | | | | SO2 | ļ R | ESIDUAL | c12 | 2 | ii | C12 | | אח3 | l I so | | RES | IDUAL C12 | | DATE |
| f | Dem. | | Dos. | A) 350(600) | 1 502 | | | | | Dem | | | | ì | | Free | Comb. | Total | ì |
| 1 1 | 1.63 | 1 | | | 1 | | I | 1 | 0.21 | 1.1 | i | 0.52 | İ | 1 | Ī | ı | | 0.67 | 1 1 |
| 2 1 | 1.84 | | | | Ť | Ĭ | i | 1 | 0.18 | 11 | 1 | 0.51 | 1 | 1 | 1 | 1 | 1 | 0.67 | 1 2 |
| 3 1 | 1.57 | - 9 | | | i | 1 | Ĭ. | 1 | 0.17 | | 1 | 0.52 | 1 | 1 | 1 | 1 | | 0.66 |] 3 |
| 4 1 | 1.84 | | 1 | Ė | Ý. | ĩ | Ī | 1 | 0.15 | 11 | 1 | 0.55 | 1 | Î | 1 | ì | | 0.67 | 1 4 |
| 5 1 | 1.85 | - | | | Î | 1 . | | 1 | 0.17 | i i | 1 | 0.63 | ľ | t | 1 | Ĩ | i | 0.67 | 1 5 |
| 6 1 | 1.90 | 390 | 1 | C. | î | Î | ì | 1 | 0.14 | 11 | 1 | 0.59 | 1 | 1 | 1 | 1 | | 0.65 | 1 6 |
| 7 1 | 0.75 | 8 | Á | | 1 | Ť | 1 | Ĩ | 0.18 | -5 156 | 1 | 0.62 | j | ī | 1 | 1 | | 0.65 | 1 7 |
| 8 1 | 0.60 | | 3 | | i | î | ĺ | Î | 0.24 | ìì | 1 | 0.50 | 1 | l | ı | i | | 0.66 | 1 8 |
| 9 1 | 0.60 | ì | 4 | | È | i | ĺ | î. | 0.24 | 11 | 1 | 0.50 | 1 | 1 | -1 | 1 | 1 | 0.66 | 1 9 |
| 10 | 0.53 | i | 1 | | i | i | ì | î. | 0.24 | 11 | 1 | 0.47 | 1 | Î | ì | i | 0 | 0.66 | 1 10 |
| 11 | 0.61 | î | 9 | r r | ï | í | Î | i | 0.25 | | î | 0.50 | Î | i | 1 | i | | 0.67 | 1 11 |
| 12 | 0.54 | i | 1 | l. | i | ì | ì | ì | | 11 | 1 | 0.51 | 1 | ì | į | Í | | 0.65 | 1 12 |
| 13 | 0.61 | i | 1 | | i | i | i | i | 0.24 | 11 | ï | 0.50 | Ī | Ĺ | ī | ī | | 0.66 | 1 13 |
| 14 | 0.64 | | - | ex D | 4 | ì | ì | i | 0.25 | | i | 0.56 | | ì | 1 | i | 1 | 0.65 | 1 14 |
| 15 | 0.69 | 100 | 3 | Š. | ì | i | î | ì | 0.30 | 37 S | i | 0.62 | | Ĩ | ī | i | | 0.67 | 1 15 |
| 16 | 0.62 | 150 | | | i | ì | i | Ť | 0.28 | | 1 | 0.55 | 17 | î | ì | Î | | 0.67 | 1 10 |
| 17 | 0.67 | | 1 | 6 | À | i ' | Ť. | i | 0.29 | 100 | - i | 0.56 | 2- | į. | 1 | i | | 0.65 | 1 |
| 18 | 0.75 | - | | Ž. | | Î | î | i. | 0.31 | (A) (A) | i | 0.57 | | Ĺ | i | i | | 0.67 | 1 18 |
| 19 | 0.61 | 6 | - 6 | 7 | i | i | ï | Ĩ | 0.29 | | Ť | 0.55 | - | i | ì | | 1 | 0.65 | 1 19 |
| 20 | 0.73 | | 1 | r. P | 1 | ì | î | i | 0.29 | F 15 | i i | 0.65 | 4 | į | i | i i | Î | 0.65 | 20 |
| 21 | 0.72 | | j | | i | =}- | Ì | i | 0.30 | 15/04/ | i | 0.59 | ì | í | 1 | 1 | | 0.66 | 1 21 |
| 22 | 0.68 | 33 | Š | | ì | ì | Î | i | 0.29 | 0.00 | Í | 0.60 | Í | Í | 1 | 1 | | 0.67 | 1 22 |
| 23 1 | 0.69 | | 9 | | 1 | i | ì | i | 0.29 | | i | 0.58 | i | ĺ | i | ì | | 0.65 | 23 |
| 24 | 0.63 | - | 9 | | ì | í | ì | ì | 0.30 | 11 | Į. | 0.55 | | i | ì | * 1 | | 0.67 | 30 |
| 25 | 0.65 | 100 | i i | Š | Î | i | Ŷ. | i | 0.30 | 11 | i | 0.54 | i. | i | i | i | | 0.69 | 1 25 |
| 26 | 0.60 | 15.5 | lit. | | i | î | i | i | | 11 | F | 0.54 | 1 | ì | i | i | 1 | 0.67 | 10000 |
| 27 | 0.67 | | | le L | × 2 | î | | 1 | 0.29 | 2 (T | | 0.58 | 6 | i | 1 | | | 0.68 | |
| 28 1 | 0.58 | i | | | i | i | i | ì | 0.30 | (E) (F) | i | 0.50 | i | i | i | | | 0.67 | |
| 29 | 0.67 | | | | 1 | Í | | 1 | 0.31 | | 1 | 0.58 | 1 | 1 | 1 | i | | 0.68 | 40 3000 |
| 30 1 | 0.64 | 1 | 3 | ly U | 1 | 1 | Ť. | 1 | 0.31 | | 1. | 0.57 | | i | 7 | | | 0.68 | 150 |
| 31 | 0.64 | 1 | 2 | | di . | | Si . | | 0.29 | 5 6 | 1 | 0.52 | B) | ľ | i | 7 | | 0.65 | |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (JUN 1985)

| | | | PRE-C | HLORINAT | | | | | | | | | CHLORINATI | ON | | | | 1 |
|------------|------|-------------|-------|----------|------|---------|-------|------|--|-----|------|------|--------------|--------|-----------|---|---------|----------|
| I ATE | c1 | | 1 | 1 | RI | ESIDUAL | C12 | | ii c | C12 | | Ī | 1 | | ESIDUAL C | | | DATE |
| l | Dem. | | | SO2 | Free | | 1 T | | Dem. | 1 | Dos. | l | SO2 | Free | Comb. | | | |
| 1 I | (| 0.66 | Ĭ | | 1 | | | 0.29 | [] | | 0.56 | | 1 | I | 1 | 1 | 0.65 |] |
| 2 1 | | 0.67 | j | | i | 1 | 1 | 0.30 | 1.1 | 1 | 0.56 | 1 | 1 | 1 | Ï | 1 | 0.66 | 1 2 |
| 3 1 | | 0.62 | Ĩ | ì | Ĩ | ì | 1 | 0.30 | 1.1 | 1 | 0.53 | Ì | Ĩ | 1 | 1 | 1 | 0.65 | 1 3 |
| 4 1 | | 0.56 | Î | 1 | 9 | Ŷ | Ĩ | 0.30 | ìi | 1 | 0.50 | ì | Ī | 1 | 1: | 1 | 0.69 | 1 4 |
| 5 1 | | 0.65 | Î | ì | i | i | ì | 0.31 | ĹĹ | 1 | 0.52 | 1 | ī | 1 | 1 | 1 | 0.68 | 1 5 |
| 6 1 | | 0.58 | Ì | i | ľ | i | 100 | 0.30 | and the same of th | 1 | 0.47 | ì | ĺ | Ĩ | Ť | 1 | 0.68 | 1 6 |
| 7 1 | | 0.53 | ì | 1 | ĺ | i | | 0.29 | | 1 | 0.46 | İ | í | 1 | Ï | 1 | 0.68 | 1 7 |
| 8 1 | | 0.58 | ì | Ĭ | Ĭ | Î | | 0.29 | | i | 0.49 | ì | Ť | T | î | 1 | 0.67 | 1 8 |
| 9 1 | | 0.63 | Ť | i | i | i | | 0.28 | | i | 0.53 | Ĺ | i | 1 | Ĩ. | 1 | 0.64 | 1 ! |
| 10 | | 0.54 | 1 | i | T | fi . | 100 | 0.30 | A. 140 | î | 0.48 | î | Î | ì | ì | 1 | 0.66 | 1 10 |
| 11 | | 0.59 | i i | ų) | Î | i | i | 0.27 | î i | i | 0.54 | i. | i | i | 1 | 1 | 0.66 | 1 13 |
| 12 | | 0.63 | li) | i | Ĭ | í | 1.00 | 0.29 | 1.1 | 1 | 0.56 | ì | Ť | ĩ | 1 | 1 | 0.66 | 13 |
| 13 | | 0.65 | i | 1 | i | î | 11.00 | 0.29 | ii | i | 0.53 | i | ì | Ŷ | i | 1 | 0.66 | 1 13 |
| 14 1 | | 0.64 | 1 | i | ř | į. | (ME) | 0,29 | î î | î | 0.51 | 127 | Ì | i | i | 1 | 0.65 | 1 1 |
| 15 1 | | 0.65 | | i | į | í | | 0.28 | ii | i | 0.65 | 100 | î | i | Ĩ. | 1 | 0.67 | 1 15 |
| 16 | | 0.59 | i i | Ť | ř | * | 0.50 | 0.28 | i i | Ť | 0.48 | 191 | ì | i i | ì | 1 | 0.66 | 1 16 |
| 17 | | 0.62 | 1 | 1 | î | i | | 0.30 | 11 | i | 0.51 | -91 | ì | i | i | ĺ | 0.67 | 1 1 |
| 18 1 | | 0.63 | 1 | i | j | ì | 100 | 0.29 | i i | i | 0.53 | | i | i | î | i | 0.66 | 1 18 |
| 19 | | 0.60 | Ť | i | 181 | i | | 0.28 | î î | ì | 0.48 | ì | i | î | i . | Ť | 0.68 | 1 19 |
| 20 | | 0.57 | 1 | i | ì | 1 | 100 | 0.31 | 11 | i | 0.50 | į. | i | i | ì | i | 0.67 | = 0.00 |
| 21 | | 0.55 | | i | î | 4 | 1000 | 0.29 | i i | i | 0.47 | i | i | i | ľ | Ť | 0.68 | 1 2 |
| 22 | | 0.61 | 120 | ¥. | i | · | 117 | 0.28 | | ï | 0.56 | 3.77 | i | Ť | i | 4 | 0.65 | [2] JEES |
| | | 0.59 | | i | i | ř | | 0.30 | | 1 | 0.50 | | î | į. | ì | i | 0.68 | 1- |
| 23 24 | | 0.59 | | i | 1 | i | - | 0.29 | A 100 | | 0.51 | 11 | î | î | i | 1 | 0.67 | 100 |
| 100.00 | | 0.60 | 10 | i | i | i | 2 | 0.28 | ii | i | 0.49 | | i | i | i | ï | 0.67 | |
| 25 | | 0.62 | 3.0 | 1 | i | 1 | | 0.27 | | 1 | 0.55 | 100 | i | ì | i | ì | 0.68 | |
| 26 | | 0.58 | | 1 | i | 1 | /III | 0.31 | 100 | Î | 0.51 | (3) | 1 | i | ì | i | 0.68 | 100 |
| 27 | | a manandele | 1 | | | I. | 3 | 0.28 | 1 1 | į | 0.52 | 15 | i | i | ï | 1 | 0.66 | |
| 28 | | 0.60 | 1 | j. | i | I I | • | 0.29 | 11 | 1 | 0.53 | A. | i | Î | i | 1 | 0.64 | 150 |
| 29 | | 0.66 | 4 | 1 | 1 | 1 | | 0.29 | | 1 | 0.53 | 1 | A. | i | ř | 3 | 0.67 | |
| 30 31 | | 0.58 | 4 | J. | 1 | į. | 1 | 0.29 | 4 K | | 0,00 | | 200 | i | i | i | V , V , | 1 3 |

TABLE 3.1: DISINFECTION PROFILE (JUL 1985)

| 1 | and a substant and | | | PRE-C | HLO | RINATIO | N | | | | 11 | الراجع المراجعة | . = . | | POST-C | HLOF | RINATI | ON | | | - | ا | |
|------|--------------------|--------|------|-------|-----|---------|-------|--------|------|------|------|-----------------|-------|------|-----------|------|--------|------|-------|---------|------|-----|------|
| DATE | | 12 | | ,,,,, | ſ | so2 | | SIDUAL | | | | | 12 | | NH3 | Ţ | 502 |) | RESID | UAL C12 | | į | DATE |
| 1 | Dem. | | | - | I | 502 | | Comb. | | | | | | | | l | 302 | Free | 1 (| Comb. | Tota | 1 | |
| 1 1 | | 1 | 0.57 | 1 | 1 | | | 1 | 1 | 0.28 | 11 | | 1 | 0.51 | ı | 1 | | L | 1 | | 0.6 | 7 1 | 1 |
| 2 1 | | | 0.55 | Ĭ | 1 | | 1 | 1 | 1 | 0.28 | 1.1 | | 1 | 0.48 | 1 | 1 | | 1 | 1 | | 0.6 | 6 1 | 2 |
| 3 1 | | 1 | 0.66 | 1 | 1 | | 1 | i | 1 | 0.29 | 11 | | 1 | 0.51 | 1 | Ĩ | | 1 | 1 | | 0.6 | 8 1 | 3 |
| 4 1 | | 1 | 0,52 | Ī | Ī | | Į. | 1 | 1 | 0.29 | 1.1. | | 1 | 0.49 | 1 | 1 | | J. | T |) | 0.6 | 7 1 | 4 |
| 5 1 | | | 0.58 | I | 1 | | 1 | 1 | 1 | 0.28 | 1.1 | | 1 | 0.53 | 1 | 1 | | 1 | 1 | | 0.6 | 0 1 | 5 |
| 6 1 | | ì | 0.65 | 1 | 1 | | ſ | 1 | 1 | 0.30 | 1.1 | | 1 | 0.53 | 1 | 1 | | ĺ | 1 | | 0.6 | 5 | 6 |
| 7 1 | | 1 | 0.61 | I | I | | I | 1 | 1 | 0.30 | 11 | | 1 | 0.48 | Ĭ | 1 | | 1 | 1 | | 0.6 | 7 1 | 7 |
| 8 1 | | 1 | 0.55 | Ī | ĺ | | 1 | 1 | 1 | 0.30 | 1.1 | | 1 | 0.48 | i | ľ | | 1 | 1 | | 0.6 | 6 1 | 8 |
| 9 1 | | | 0.55 | 1 | i | | 1 | i | 1 | 0.29 | 1.1 | | 1 | 0.49 | 1 | 1 | | 1 | 1 | | 0.6 | 6 1 | 9 |
| 10 | | 1 | 0.56 | 1 | 1 | | T | 1 | 1 | 0.30 | 1.1 | | 1 | 0.49 | 1 | - 1 | | 1 | 1 |) | 0.6 | 7 | 10 |
| 11 | | 1 | 0.62 | ı | 1 | | 1 | 1 | 1 | 0.28 | 1.1 | | 1 | 0.52 | ı | 1 | | 1 | ı | | 0.6 | 7 1 | 11 |
| 12 | | 1 | 0.56 | 1 | 1 | | 1 | 1 | 1 | 0.29 | 11 | | 1 | 0.49 | 1 | Ľ | | Į. | 1 |) | 0.6 | 8 | 12 |
| 13 | | 1 | 0.66 | 1 | 1 | | T. | 1 | 1 | 0.28 | 1.1 | | 1 | 0.54 | ł | 1 | | 1 | - 1 | j | 0.6 | 7 1 | 13 |
| 14 | | ı | 0.58 | 1 | 1 | | 1 | 1 | 1 | 0.30 | 1.1 | | 1 | 0.61 | 1 | 1 | | 1 | 1 | | 0.6 | 7 | 14 |
| 15 | | 1 | 0.68 | 1 | 1 | | 1 | L | 1 | 0.32 | 1.1 | | 1 | 0.56 | 1 | 1 | | 1 | ì | | 0.7 | 5 | 15 |
| 16 | | 1 | 0.66 | 1 | ĵ | | Ï | ĺ | 1 | 0.30 | 1.1 | | 1 | 0.56 | 1 | 1 | | L | Ĭ | | | 8 | 16 |
| 17 | | | 0.65 | ı | 1 | | 1 | Ĺ | 1 | 0.29 | 1.1 | | 1 | 0.55 | i | 1 | | 1 | 1 | | 0.7 | 5 1 | 17 |
| 18 | | i | 0.66 | 1 | f | | Í | 1 | T | 0.30 | 1.1 | | 1 | 0.56 | i | 1 | | 1 | I | | 0.7 | 9 1 | 18 |
| 19 | | 1.00.1 | 0.61 | | 1 | | j | 1 | 1 | 0.28 | 11 | -K | 1 | 0.54 | 1 | L | | 1 | 1 | | 0.7 | 6 | 19 |
| 20 | | | 0.66 | | 1 | | Į. | 1 | 1 | 0.30 | 1.1 | | 1 | 0.61 | 1 | I | | 1 | 1 | 5 | 0.7 | 6 | 20 |
| 21 | | - | 0.57 | | Î | | 1 | 1 | 1 | 0.29 | 1.1 | | 1 | 0.54 | 1 | 1 | | 1 | 1 | | 0.7 | 6 | 21 |
| 22 | | | 0.62 | ì | 1 | | Ĭ | Ī | I | 0.28 | 1.1 | | 1 | 0.53 | i. | ľ | | ì | ī | | 0.7 | 7 1 | 22 |
| 23 1 | | 101 | 0.62 | i | i | | ĵ | 1 | 1 | 0.27 | 11 | | 1 | 0.55 | I. | 1 | | 1 | - 1 | 7 | 0.7 | 6 1 | 23 |
| 24 | | - | 0.59 | Ť | i | | T | L | Ī | 0.29 | 11 | 4 | 1 | 0.50 | ı | 1 | | 1 | 1 | | 0.7 | 8 1 | 24 |
| 25 1 | | | 0.67 | ì | Ť | | T. | i | ì | 0.29 | 11 | | 1 | 0.56 | 1 | Í | | Ï | Î | | 0.7 | 7 1 | 25 |
| 26 1 | | 5.000 | 0.61 | | Î | | | i | ĺ | 0.29 | ii | | 1 | 0.54 | i | i | | 1 | i | | | 8 1 | 26 |
| 27 1 | | 200 | 0.63 | i | Î | | j. | Ï | Ī | 0.28 | 11 | | i | 0.53 | ì | î | | Í | Ī | i | 0.7 | | 27 |
| 28 1 | | | 0.70 | i | ī | | 9 | i | i | 0.30 | ĺĹ | | i | 0.60 | Í | ì | | | í | | 0.7 | (3) | 28 |
| 29 | | | 0.60 | i | i | | ì | î | 3 | 0.30 | ĺį | | i | 0.56 | Ĺ | i | | | i | | | 7 1 | 29 |
| 30 | | | 0.66 | | i | | i i | Ť | i | 0.28 | 1.1 | | 1 | 0.60 | 1 | - | | i | î | | | 6 1 | 30 |
| 31 (| | 200 | 0.58 | | 1 | | | T. | i de | 0.29 | 1 1 | | 1 | 0.51 | 1 | | | 1 | 1 | | | 8 1 | 31 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (AUG 1985)

| ì | | | | PRE-C | HLO | RINATIO | N | | | | | 1-1 | iere mali abro- | | POST-C | HLORINAT | ION | | | | [|
|------|-----|---------|------|---------|-------|---------|-----|-----------------|----------|---------|------|------|---------------------|------|------------|------------|------|---------|---------|-------|--|
| DATE | | Cl2 | | 1 | 1 | | 1 | RE | SIDUAL | C12 | | | :12 | | I I NH3 | I I 502 | R | ESIDUAL | C12 | | DATE |
| 1 | | | Dos. | . I ИНЗ | i | S02 | 1 | Free | Comb. | T | otal | 11 | | | 3.3 | 1 302 | Free | Comb. | . 1 | Total |) |
| 1 | | 1 | 0.57 | T | I | ====== | 1 | 70-101 II- 1044 | 1 | 1 | 0.30 | 11 | 1 | 0.52 | 1 | 1 | l | 1 | ī | 0.77 | i |
| 2 1 | | 1 | 0.66 | Ī | 1 | | 1 | | 1 | 1 | 0.26 | 1.1 | 1 (| 0.55 | 1 | 1 | 1 | I. | 1 | 0.78 | 1 2 |
| 3 1 | | | 0,65 | | Ĩ | | 1 | | 1 | Ī. | 0.28 | 1.1 | 1 (| 0.58 | 1 | I | 1 | 1 | 1 | 0.78 |] 3 |
| 4 1 | | 1 | 0.64 | ì | Î | | Ī | | Ì | Ī | 0.29 | 1.1 | 1 1 | 0.59 | 1 | I | 1 | 4 | Ţ | 0.76 | 4 |
| 5 1 | | 1 | 0.62 | Tr E | 1 | | Ī | | 1 | 1 | 0.30 | 1.1 | 1 (| 0.57 | 1 | I | I | Ţ. | 1 | 0.77 | 5 |
| 6 1 | | | 0.69 | - | î | | Ť | | Í | 1 | 0.30 | 1.1 | 1 (| 0.60 | Î | Î | Ĩ | 1 | 1 | 0.78 | 1 6 |
| 7 1 | | | 0.62 | - | ĩ | | Ť | | i | ì | 0.29 | 1.1 | 1 (| 0.55 | I | 1 | l. | | 1 | 0.77 | 7 |
| 8 1 | | 105 | 0.62 | 0. | 1 | | i | | ì | Ì | 0.27 | 1.1 | 1 (| 0.55 | 1 | 1 | 1 | 1 | 1 | 0.77 | 8 |
| 9 1 | | | 0.56 | | ſ | | Ì | | î | Ĺ | 0.27 | 1.1 | [(| 0.51 | ĺ | i | Ì | Ť | 1 | 0.73 | 1 9 |
| 10 | | | 0.67 | (3) | i | | î. | | i | i | 0.28 | 11 | 1 (| 0.56 | I | I | 1 | 1 | 1 | 0.75 | 10 |
| 11 | | | 0.69 | - 15 | i | *1 | ì | | í | - 0.5 | 0.27 | 1.1 | | 0.59 | l | Ī | 1 | 1 | 1 | 0.73 | 11 |
| 12 | | 105 | 0.59 | | i | | ī | | í | | 0.27 | 1.1 | 1 0 | 0.54 | i | î | i | ĺ | - 1 | 0.77 | 12 |
| 13 | | | 0.64 | | ï | | î | | ï | | 0.27 | 11 | - 4 | 0.56 | 2 | î | İ | 1 | 1 | 0.79 | 1 13 |
| 14 | | 1,77 | 0.66 | | - 1 | | ij. | | í | | 0.28 | ii | | 0.60 | î. | Î | i | 1 | 1 | 0.78 | 1 14 |
| 15 | | | 0.63 | | | | Ė | | ï | (T) | 0.27 | ΪÌ | | 0.56 | Î | î | Ĩ | i | | 0.78 | 1 15 |
| 16 | | | 0.68 | | | | Ť | | ì | 100 | 0.30 | Ĥ | 7 | 0.59 | Î | Î | i | i | 1 | 0.77 | 1 16 |
| 17 | | 78 | 0.69 | | 1 | | ŧ | | * | | 0.29 | ii | 40.0 | 0.61 | | i | í | ì | 1 | 0.78 | 1 17 |
| 18 | | 100 | 0.67 | 1.50 | | | ķ. | | Ŷ. | - | 0.28 | ŤΪ | | 0.59 | ì | î | ï | Î | Ī | 0.76 | 1 18 |
| 19 1 | 18. | // | 0.65 | | i | | i. | | ar P | V. | 0.29 | 1.1 | | 0.56 | Î | ì | Ť | i . | Ť | 0.80 | 1 19 |
| 20 | | | 0.61 | 1.00 | -96 | | - | | il. | 2000 | 0.27 | ii | 93 | 0.54 | ì | î | i | i | 1 | 0.76 | 1 20 |
| 20 | | | 0.65 | | 1 | | 9 | | i | | 0.29 | 11 | | 0.57 | î | i | ï | i | ñ | 0.77 | 1 21 |
| 22 | | | 0.65 | 1 | 1 | | 4 | | ř | (*) | 0.28 | 11 | 21 | 0.57 | ì | i | i | Š. | - 1 | 0.79 | A COLUMN TO THE PARTY OF THE PA |
| 23 | | 3 | 0.65 | 1 | | | 1 | | yb Th | | 0.28 | 11 | - | 0.56 | î | ì | i | ì | Ė | 0.78 | · Level Le |
| | | 100 | | | 1 | | | | 4 | 100 | 0.28 | ii | | 0.63 | i | i | 1 | i | î | 0.78 | Cles 1041 |
| 24 | | | 0.71 | 1.5 | | | | | 1 | | 0.29 | 11 | | 0.57 | ì | i | Ť | Î | î | 0.77 | |
| 25 | | - 1 | 0.66 | | ı. | | al. | | 3E | 0.40 | 0.28 | 11 | | 0.57 | Ŷ. | i | i | ì | | 0.77 | is. |
| 26 | | 96 | 0.66 | | ı, | | l. | | | 20 | 0.29 | | - D | 0.55 | à. | ŧ | i | ì | 1 | 0.76 | |
| 27 | | | 0.62 | | - | | ŀ | | i i | 256 | 0.29 | 1.1 | | 0.54 | 1 | 1 | į. | s I | 1 | 0.77 | A. Design |
| 28 | | | 0.63 | 17 | ı, | | 1 | | | | | 8 35 | | 0.56 | i. | 1 | ŀ | i | - 5 | 0.76 | 15 |
| 29 | | | 0.66 | | 1 | | ł. | | i. | 100 | 0.26 | 11 | | | | \$ | + | ì | 192 | 0.78 | - |
| 30 | | | 0.62 | | Š | | 4 | | 1,2 | 7.5 | 0.27 | 1.1 | 2 | 0.54 | 1 | i i | * | 1 | 3: 1 | 0.77 | 1000000 |
| 31 | | 1 | 0.65 | j, | 1 | | ı | | L | į | 0.26 | 1.1 | 4 | 0.55 | 4. | 1 | J. | | , An | 0.77 | 1 31 |

TABLE 3.1: DISINFECTION PROFILE (SEP 1985)

| 1 | | | | PRE-C | HLO | RINATIO | NC. | | | | | 11 | | | | | LORINATI | on | | | | 1 | |
|------------|------|-----|------|-----------|-------|---------|-----|-----------|--------|-------|------|-----------|-----|-----|---------------|---------|------------|--------|---------|-------|-------|------|-----|
| DATE I | | :12 | | | ļ | 603 | Ï | 900000000 | SIDUAL | C12 | | ii | C1 | 2 | | ſ | I I 502 | J R | ESIDUAL | C12 | | į D. | ATE |
| ĵ | Dem. | | Dos. | | i | 502 | F | ree | Comb. | | | i i D | em, | 1 [| Dos. | 4 40 40 | ì | Free | Comb | . 1 | Total | i | |
| 1 I | · | - | 0.74 | | I | | 1 | | 1 | 1 | 0.26 | AC 142 | | | 0.56 | | 1 | 1 | I | 1 | 0.77 | 1 | 1 |
| 2 1 | | | 0.57 | Ī | 1 | | 1 | | 1 | 1 | 0.26 | 11 | | 1 | 0.51 | į. | 1 | 1 | 1 | - 1 | 0.77 | ŧ | 2 |
| 3 1 | | i | 0.60 | i | 1 | | Î | | 1 | 1 | 0.28 | 1.1 | | l | 0.57 | i . | ī | i. | j | 1 | 0.76 | 1 | 3 |
| 4 1 | | i | 0.63 | ì | î | | i | | 1 | 1 | 0.28 | 1.1 | | 1 | 0.55 | î | ı | 1 | i | 1 | 0.77 | 1 | 4 |
| 5 1 | | Ÿ | 0.64 | ì | ī | | 4 | | 1 | i | 0.29 | 11 | | Ĩ | 0.57 | 1 | i | 1 | Ī | 1 | 0.77 | 1 | 5 |
| 6 | | Ť | 0.60 | ì | ì | | i | | ì | 1 | 0.29 | Î | | ĺ | 0.54 | Î | I | l | Í | 1 | 0.78 | 1 | 6 |
| 7 1 | | 1 | 0.62 | i. | ì | | ì | | 1 | 1 | 0.29 | 11 | | ĺ | 0.54 | Î | I. | I | 1 | 1 | 0.77 | 1 | 7 |
| 8 1 | | ì | 0.64 | ì | i | 181 | î | | 1 | 1 | 0.28 | 11 | | 1 | 0.57 | į. | Ī | ű | j | 1 | 0.76 | I | 8 |
| 9 1 | | i | 0.62 | ì | i | | 7 | | i | 101 | 0.26 | 8 8 | | Ì | 0.56 | î | i | ì | i | 1 | 0.71 | 1 | 9 |
| 10 | | 1 | 0.66 | i | Ť | | 1 | | i | 300 | 0.28 | 81.8 | | 2 | 0.54 | t | i | T | 1 | 1 | 0.78 | 1 | 10 |
| 11 | | | 0.66 | | i | | i | | 1 | 150 | 0.28 | | | | 0.60 | î | i | Ĩ | ì | ì | 0.77 | Ī | 11 |
| 12 | | | 0.64 | ì | - 1 | | ì | | i | 120 A | 0.28 | -2001 | | - | 0.56 | ì | i | ì | ì | î | 0.78 | ì | 12 |
| 13 | | | 0.65 | 1 | Ť | | À | | i | 4 | 0.30 | 1 3 | | | 0.54 | Ĺ | Ĺ | ik . | i | Ē | 0.79 | | 13 |
| 14 | | | 0.61 | | Ŷ | | 1 | | 1 | | 0.30 | | | | 0.56 | 51 | i | ì | ï | i | 0.78 | i | 14 |
| 15 | | 1 | 0.69 | ì | - 1 | | 4 | | ì | | 0.30 | 20119 | | | 0.60 | | i | i | i | i | 0.77 | 9 | 15 |
| 16 | | | 0.60 | di T | 4 | | | | ì | | 0.29 | 2 64 | | Š. | 0.54 | i | i | i | i · | - 1 | 0.79 | | 16 |
| 17 | | 10 | 0.57 | ļ. | - | | 1 | | 1 | | 0.26 | | | | 0.51 | ì | ì | i | ř | 1 | 0.76 | 12.0 | 17 |
| LILLIAN TO | | 4 | 0.56 | t. | - 1 | | å | | 1 | 175 | 0.28 | ESA MESA | | 24 | 0.49 | î | Ť | î | i | · * • | 0.79 | | 18 |
| 18 | | 1 | | 1 | 1 | | | | 4 | (B) | 0.28 | | | 95 | 0.50 | | Ď. | ž. | | i | 0.78 | 4 | 19 |
| 19 | | 1 | 0.58 | ļ | | | 1 | | L T | * | 0.30 | 100 1101 | | - | 0.51 | r F | Ť | Ŷ | ì | 1 | 0.77 | | 20 |
| 20 | | 1 | 0.57 | 1 | - 2 | | 1 | | L I | | 0.29 | | | | 0.49 | | D. | 7 | | 7 | 0.76 | - 5 | 21 |
| 21 | | 1 | 0.56 | į. | | | 2 | | ÷ | | 0.31 | | | 8 | 0.52 | | (8) | 4 | i i | - 1 | 0.75 | | 22 |
| 22 | | 1 | 0.57 | 1 | • | | à l | | I. | - | 0.29 | | | - | 0.49 | i i | E E | 40 | 1 | 1 | 0.78 | 0.00 | 23 |
| 23 | | 1 | 0.56 | 1 | - A | | l. | | I. | | | (50 (500) | | 150 | DAY OF PERSON | i i | i. | | ļ | | 0.76 | | 24 |
| 24 1 | | 1 | 0.62 | L | | | | | ļ | 150 | 0.27 | | | | 0.51 | | u P | | | | 0.76 | 10 | 25 |
| 25 | | 1 | 0.55 | ļ | 1 | | | | l i | 53 | 0.28 | 1 1 | | | 0.50 |] } | il. | 1 | | b | 0.78 | | 26 |
| 26 | | 1 | 0.64 | I | 1 | | 1 | | Ţ | | 0.29 | 1.1 | | - | 0.55 | Į. | į. | 1 | ! | 1 | | 10.0 | |
| 27 | | | 0.61 | l. | - 1 | | I | | I. | 200 | 0.27 | 1 1 | | | 0.51 | | Ţ | 1 | I. | | 0.77 | 8 | 27 |
| 28 | | 1 | 0.61 | i | Ţ | | 1 | | ļ | 139 | 0.28 | | | 100 | 0.50 | 5 | L is | Į | Į | 1 | 0.78 | | 28 |
| 29 | | 1 | 0.61 | 1 | F | | 1 | | I | | 0.28 | 1901 1090 | | | 0.53 | Į. | Ī | Ţ | ı | 1 | 0.78 | | 29 |
| 30 | * | 1 | 0.58 | 1 | 1 | | Ţ | | 1 | 1 | 0.29 | 1.1 | | 1 | 0.52 | į. | Ţ | J. | l | ı | 0.78 | 1 | 30 |
| 31 | | 1 | | Í | 1 | | 1 | | I | 1 | | 1.1 | | i | | 1 | t | 1 | 1 | 1 | | 1 | 31 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (OCT 1985)

| 1 | | | | PRE-C | HLO | RINATIC | N | | | | 11 | | | د د د د د د د | 7.00 | 400 | LORINA' | rion | | | | | 1 | |
|--------|------|-------|------|------------|-------|---------|----|--------|----------|--|-----|------|-----|---------------|------|-----|---------|------|------|------------|-------|------|-----|---------|
| DATE (| | 12 | | 1 | 1 | | | SIDUAL | c12 | 2 | 11 | C | 212 | | l | | 1 | ĺ | | SIDUAL C12 | | | DA' | TE |
| į Į | Dem. | | | S ANDRES S | İ | S02 | | | | | | Dem. | 1 | | 1 | | 1 | 1 | Free | Comb. | | | | The tab |
| 1 1 | | I | 0.61 | | I | | 1 | 1 | I | 0.27 | 11 | | | 0.51 | | | i | I | | I | ı | 0.77 | 1 | 1 |
| 2 1 | | 1.0 | 0.57 | Î | 1 | | 1 | i | 1 | 0.28 | 11 | | 1 | 0.49 | 1 | | 1 | 1 | | 1 | i | 0.78 | 1 | 2 |
| 3 1 | | -0 | 0.60 | 1 | i | | Ì | Î. | 1 | 0.30 | 1.1 | | 1 | 0.49 | 1 | | 1 | - 1 | | Ĵ. | 1 | 0.79 | l | 3 |
| 4 1 | | 7 | 0.55 | i | i | | Î | ì | 1 | 0.26 | 1.1 | | Ĺ | 0.51 | Î | | 1 | i | | I | ı | 0.77 | 1 | 4 |
| 5 1 | | | 0.65 | î | i | | i | i | ı | 0.30 | 1.1 | | 1 | 0.56 | L | | 1 | - 1 | | ſ | E. | 0.77 | 1 | 5 |
| 6 1 | | | 0.53 | i | 4 | | i | | 1 | 0.28 | 11 | | ľ | 0.50 | 1001 | | ı | 1 | | 1 | 1 | 0.76 | 1 | 6 |
| 7 1 | | 5 | 0.66 | i | i | | Ì | i | 1 | | 11 | | 1 | 0.51 | | | I | ı | | Î | 1 | 0.78 | 1 | 7 |
| 8 1 | | | 0.61 | i | i | | ì | i | 1 | 0.29 | 11 | | ı | 0.51 | ì. | | ı | i | | 1 | ı | 0.79 | 1 | 8 |
| 9 1 | | 100 | 0.58 | ì | i | | i | į | i | 144 | 1.1 | | 1 | 0.47 | Ì | | ì | î | | 1 | 200 | 0.77 | | 9 |
| 10 | | | 0.54 | 1 | 4 | | i | i | ī | 0.30 | | | Ť | 0.47 | i | | i | i | | í | 1 | 0.76 | ì | 10 |
| 11 1 | | | 0.51 | 3 | 3 | | 1 | F . | ì | 0.26 | | | i | 0.46 | i | | î | ì | | î | ۹. | 0.76 | | 11 |
| 12 | | | 0.63 | į. | - 3 | | i | ř | ì | 0.28 | 1.1 | | ī | 0.62 | ì | | i | i | | 1 | 1 | 0.75 | ĺ | 12 |
| 13 | | | 0.58 | 4 | - | | 1 | ř. | ì | 100 | 11 | | i | 0.48 | i | | i | Ĩ | | Ĺ | i | 0.78 | ì | 13 |
| 14 | | | 0.66 | i | 4 | | 1 | i | ĺ | 0.28 | 11 | | i | 0.49 | ì | | ì | i | | î | 1 | 0.78 | | 14 |
| 15 I | | 35 | 0.59 | 1 | 1 | | i | i | i | 0.27 | 1 1 | | i. | 0.51 | i | | i | i | | i | | 0.76 | 7. | 15 |
| 16 | | al . | 0.60 | 1 | 4 | | | ř | 1 | 0.27 | 11 | | ï | 0.49 | Ť | | i | i | | 1 | | 0.76 | | 16 |
| 17 | | - | 0.62 | 1 | 1 | | 1 | Ť | ì | 0.28 | 11 | | i i | 0.55 | ì | | i | Ü | | Ť | | 0.77 | 55 | 1 |
| 18 | | | 0.65 | 1 | -4 | | 1 | II. | ì | 0.29 | ii | | ě. | 0.52 | ì | - | ì | Ŷ | | i | | 0.77 | | 18 |
| 10 I | | 15 | 0.47 | 4 | 4 | | ŀ | \$ | i i | THE PROPERTY OF THE PARTY OF TH | 11 | | ř | 0.50 | 1 . | | i | ì | | î | | 0.78 | | 19 |
| 1.60 | | 100 | | 4 | 3 | | 1 | ÷ · | ì | 0.29 | 100 | | i | 0.55 | | | e d | - 1 | | i | ā. | 0.76 | 6.7 | 20 |
| 20 | | | 0.70 | 1 | 4 | | 1 | ř | ì | 0.28 | 98 | | Ŷ. | 0.48 | | | ì | 1 | | i | | 0.75 | | 21 |
| 21 | | | 0.64 | 1 | 10 | | ŀ | 4 | 1 | 0.29 | | | | 0.52 | 1 | | 1 | i i | | t t | | 0.76 | • | 22 |
| 22 | | 7 | 0.62 | ! | | | 1 | 1 | t T | 0.28 | (0) | | 1 | 0.50 | r | | i L | - 1 | | 1 | | 0.75 | | 2: |
| 23 | | | 0.57 | 1 | - 1 | | Į. | t r | ı | 0.26 | | | 1 | 0.56 | 4 | | i | | | ì | | 0.77 | 0 | 24 |
| 24 | | | 0.58 | 1 | 1 | | 1 | 1 | į. | 0.28 | 200 | | | 0.55 | 50 | | i | - 4 | | | - | 0.76 | | 2! |
| 25 | | | 0.65 | Į. | - 1 | | 1 | 1 | JI. | | | | 1 | | | | 1 | 4 | | | 7.7 | 0.78 | | 21 |
| 26 | | 100 | 0.68 | Į. | L | | 1 | 1. | il it | 0.28 | 11 | | į | 0.63 | 2 | | 1 | | | į. | | 0.79 | | 2 |
| 27 | | | 0.73 | 4 | 1 | | ļ | l . | 1 | 0.29 | | | 1 | 0.61 | | | 1 | 1 | | | 100.1 | | | |
| 28 | | | 0.71 | 1 | 1 | | 1 | 4 | I | 0.30 | 1 1 | | 1 | 0.52 | | | T . | , i | | 1 | | 0.77 | 2 | 28 |
| 29 | | | 0.66 | Į | I | | Į. | ı. | ŀ | 0.28 | 1.1 | | 1 | 0.54 | | | 1 | 1 | | 1 | | 0.78 | | 2 |
| 30 | | | 0.61 | 1 | 1 | | d | F | l. | 0.29 | 1 1 | | 1 | 0.61 | | | ŀ | I | | 1 | | 0.78 | | 30 |
| 31 | | 1 | 0.66 | 1 | 1 | | 1 | 1 | 1 | 0.27 | 1.1 | | 1 | 0.54 | 1 | | 1 | , J | | 1 | 1 | 0.78 | | 3 |

TABLE 3.1: DISINFECTION PROFILE (NOV 1985)

| 1 | National Control of the Control of t | | | PRE-C | HLOR | INATIO | N | | | | 11 | | | | POST-C | HLOR | INATIO | N | | | | _ I | |
|------------|--|-------|------|-------------|--------|--------|--------|---------|----|-------------|------------|---|--------|------|------------|------|--------|--------|------------|----------|------|------|-----------|
| DATE | | C12 | | l L Miro | 1 | SO2 | l Ri | ESIDUAL | C) | 12 | 11 | 4 | C12 | | I I NH3 | 1 | S02 | .81 | | DUAL C12 | | į | DATE |
| i i | | | Dos. | 3 | Ì | 302 | Free | | | | 1000 | | | | ★ CONTRACT | i | 302 | | | Comb. | | | |
| 1 | | I | 0.62 | 1 | 1 | | i | I | Ī | 0.29 | | | 1 | 0.53 | ì | ſ | | 1 | Ï | 1 | 0.77 | i | 1 |
| 2 1 | | 1 | 0.61 | Ī | 1 | | 1 | 1 | 1 | 0.26 | 1.1 | | 1 | 0.64 | 1 | 1 | | 1 | 1 | 1 | 0.76 | 1 | 2 |
| 3 1 | | ì | 0.84 | i | 1 | | i | 1 | T | 0.27 | 1.1 | | 1 | 0.59 | 1 | 1 | | 1 | 1 | t | 0.76 | - 1 | 3 |
| 4 1 | | i | 0,61 | 1 | Ĩ | | Î | Ĭ | Ĩ | 0.28 | 11 | | 1 | 0.53 | 1 | İ | | ì | 1 | 1 | 0.76 | 1 | 4 |
| 5 | | i | 0.65 | 1 | ĺ | | Ī | 1 | i | 0.29 | 11 | | Í | 0.54 | i . | ĺ | | ı | . 1 | î | 0.76 | 1 | Ę |
| 6 | | i | 0.70 | i | ï | | 1 | 1 | 1 | 0.27 | 11 | | 1 | 0.58 | f | 1 | | 1 | 1 | 3 | 0.75 | 1 | E |
| 7 1 | | 1 | 0.70 | 1 | 1 | | 1 | Î | i | 0.26 | 11 | | Ī | 0.53 | Î | 1 | | l | 1 | , 1 | 0.75 | 1 | 7 |
| 8 1 | | i | 0.66 | 1 | i | | 1 | 1 | Î | 0.27 | 18: 18 | | 1 | 0.60 | i | 1 | | Ĭ | 1 | 1 | 0.78 | 1 | 8 |
| 9 1 | | i | 0.87 | i | 1 | | 1 | 1 | 1 | 0.28 | 11 | | 1 | 0.74 | 1 | ſ | | 1 | - 1 | 1 | 0.78 | 1 | |
| 10 | | 1 | 0.72 | i | i | | ì | j | 1 | 2 10 22 | ii | | ĺ | 0.59 | Î | î | | Ī | 1 | Î | 0.77 | ì | 10 |
| 11 | | i | 0.74 | 1 | i | | Í. | i | i | 0.30 | ii | | í | 0.58 | i | ì | | Ì | 1 | j | 0.79 | | 1 |
| 12 | | i | 0.58 | i | 1 | | Ï | ĺ | 1 | 0.27 | ΪÌ | | i | 0.47 | i | ì | | Í | 1 | 1 | 0.78 | - | 13 |
| 13 | | 1 | 0.59 | Ĩ | Í | | ì | ï | i | 0.27 | Ti | | Ī | 0.47 | Ť | Î | | Î | ã | î | 0.74 | | 1: |
| 14 1 | | | 0.62 | 1 | i | | i | i | i | 0.29 | ii | | î | 0.56 | Î | i | | Ì | 1 | i | 0.79 | | 1 |
| 15 | | ì | 0.64 | i . | Ī | | Î. | ï | ī | San Dispara | 11 | | 1 | 0.54 | Î | i | | i | ī | i | 0.78 | | 15 |
| 16 1 | | 1 | 0.59 | ř | 1 | | î. | Ť. | 1 | 0.28 | 10.94 | | i | 0.56 | ĺ | ì | | Î | | ì | 0.78 | - 10 | 10 |
| 17 1 | | 10 | 0.63 | i | i | | î | Ī | i | 0.28 | | | i | 0.58 | ì | i | | ì | i | i | 0.78 | - 35 | 1 |
| 18 1 | | | 0.64 | | i | | ì | i | i | 0.28 | | | i | 0.51 | ř | i | | i | 1 | i | 0.78 | 1.0 | 18 |
| 19 1 | * | 1 | 0.63 | Ť | ì | | î | T. | ï | 0.28 | | | 1 | 0.56 | Ť | i | | Î | î. | | 0.77 | 145 | 1 |
| 20 | | 1 | 0.68 | î | i | | i | i | i | | ii | | i | 0.50 | Í | i | | ĺ | | i | 0.76 | - 50 | 20 |
| 21 | | i | 0.59 | | i | | í | i | ī | 0.27 | | | i | 0.51 | i | ì | | ì | i | ì | 0.77 | | 21 |
| 22 | | T | 0.62 | i | a a | | ì | ï | 1 | 0.28 | ii | | 1 | 0.50 | ŕ | í | | F | i | Ť | 0.78 | | 22 |
| 23 1 | | 1 | 0.63 | | î | | 1 | Ŷ | i | 0.28 | 11 | | i | 0.61 | Î | i | | ì | 45 | î | 0.78 | | 23 |
| 24 | | 1 | 0.55 | 2 | i i | | i | ì | i | 0.29 | | | i | 0.55 | ĺ | i | | i . | ï | ì | 0.78 | | 24 |
| 25 1 | | 1 | 0.60 | ì | i | | ì | ť | ī | 0.28 | 1.1 | | í | 0.46 | i | ì | | ì | | î | 0.77 | | 25 |
| 26 1 | | 1 | 0.64 | 10 | 1 | | i | ì | 1 | | 11 | | 1 | 0.52 | i | i | | 1 | í | | 0.78 | | 20 |
| 27 1 | | | 0.49 | | | | i | i | ì | 0.28 | ii | | i | 0.45 | i | į. | | i | 70 | î | 0.78 | 188 | 2 |
| 28 1 | | | 0.71 | | 7 | | r | ř | 4 | 0.29 | | | ī | 0.47 | i | ï | | ï | | 1 | 0.74 | 7 | 28 |
| 29 | | 4 | 0.71 | | Ŷ | | i. | 1 | T. | 0.30 | 100 | | 1 | 0.53 | í | 1 | | i. | 181 | | 0.78 | - | 2 |
| 1(+015) F | | 4 | | ita Ira | | | 1 | | ì | | - 8° 60 | | ď. | | † | Ť | | | | ė. | | . 3 | 30 |
| 0.00 | | | 0.39 | | | | i i | 1 | 1 | 0.29 | 11 | | 1 | 0.47 | ľ | 1 | | | 981 161 | 1 | 0.77 | | 31 |
| 30 31 | | 1 | 0.59 | l l | ! ! | | Î Î |]] | l | 0.29 | 1 I 1 I | | l l | 0.47 | Î L | Î | | i i | 1 | 1 | 0 | . 77 | .77 |

TABLE 3.1: DISINFECTION PROFILE (DEC 1985)

|) | | | | PRE-C | ILOKII | NATION | | | | 11 | | | | POST-C | | KINALIC | · | | | | | ř |
|---------------|------|-----|------|-----------|--------|--------|-----------|-----|------|------|------|------|------|--------|---|---------|-------|-----|-----------|-----|------|------------|
| ATE | | 12 | | 1 | l |] | ESIDUAL | C12 | 2 | 1.1 | c1 | 2 | | I | I | 502 | 10.00 | | IDUAL C12 | | | DAT |
| 1 | Dem. | | | W SANDONE | l S | 02 | | | | 20.5 | Dem. | | | | İ | | | | Comb. | | | ! |
| 1 (| | 1 | 0.79 | | 1 | 1 | I | ŀ | 0.27 | 11 | | Ī | 0.49 | 1 | 1 | | ſ | 1 | | I | 0.75 | i |
| 2 1 | | | 0.70 | | 1 | ì | ì | ì | 0.28 | 1.1 | | L | 0.57 | 1 | 1 | | 1 | 1 | | 1 | 0.77 | 1 |
| 3 1 | | | 0.65 | ì | i. | Î | ï | T. | 0.30 | 1.1 | | 1 | 0.53 | 1 | 1 | | 1 | 1 | ļ | 1 | 0.77 | T . |
| 4 1 | | | 0.58 | i | į. | i | ì | 1 | 0.27 | 1.1 | | 1 | 0.44 | 1 | 1 | | ſ | 1 | | 1 | 0.76 | Į. |
| 5 1 | | | 0.60 | i | î | i | ĺ | L | 0.28 | 1.1 | | 1 | 0.59 | 1 | i | | 1 | 1 | , | l | 0.75 | 1 |
| 6 1 | | | 0.65 | | i | î | 1 | Ĩ | 0.27 | 1.1 | | 1 | 0.45 | 1 | 1 | | 1 | 1 | -1 | 1 | 0.77 | 1 |
| 7 1 | | 1.0 | 0.57 | | Î | Ī | 1 | 1 | 0.28 | 1.1 | | ſ | 0.52 | 1 | 1 | | L | 1 | Ī | 1 | 0.77 | T |
| 8 1 | | 15 | 0.77 | | Ė | í | 1 | 1 | 0.28 | 11 | | 1 | 0.58 | 1 | 1 | | 1 | 1 | | 1 | 0.75 | 1. |
| 9 1 | | | 0.60 | î | î | ı | 1 | Ī | 0.29 | 1.1 | | L | 0.50 | 1 | 1 | | 1 | 1 | 1 | i – | 0.78 | 1 |
| 10 1 | | | 0.66 | i | i | î | Ī | Ī | 0.29 | 1.1 | | 1 | 0.55 | 1. | 1 | | 1 | - 1 | 1 | l | 0.77 | (1 |
| 11 | | - 5 | 0.61 | ì | i | 1 | 1 | 1 | 0.30 | 1.1 | | Ī | 0.53 | 1 | 1 | | 1 | - 1 | | i | 0.77 | 1 1 |
| 12 | | 2 | 0.61 | ī | Î | Î | ì | 1 | 0.29 | 1.1 | | 1 | 0.47 | Î | 1 | | 1 | 1 | 1 | 1 | 0.76 | 1 1 |
| 13 | | | 0.61 | i | ŕ | i | 1 | ï | 0.27 | 1.1 | | 1 | 0.52 | 1 | 1 | | i. | 1 | | 1 | 0.74 | 1 |
| 14 | | | 0.63 | ì | i | ì | Ī | î | 0.28 | 11 | | 1 | 0.56 | 1 | 1 | | 1 | - 1 | | ı | 0.74 | 1 1 |
| 15 | | | 0,56 | i | î | i | i | i | 0.27 | 11 | | 1 | 0.54 | Ī | i | | T | - 1 | | 1 | 0.76 | 1 1 |
| 16 | | 17 | 0.69 | ï | | ì | i | i | 0.30 | 1.1 | | | 0.50 | Ĺ | I | | T . | - 1 | i. | 1 | 0.73 | 1 |
| 17 | | 100 | 0.62 | | P | ĝ | 1 | ì | 0.30 | 11 | | f. | 0.59 | Ī | ı | | l | 1 | | 1 | 0.74 | 1 |
| 18 | | 3 | 0.56 | i | i | i | Ĺ | î | 0.29 | 11 | | Ì | 0.55 | ĺ | 1 | | 1 | 1 | | 1 | 0.72 | 1 1 |
| 19 | | | 0.62 | ì | i | | i e | ń. | 0.26 | ii | | î. | 0.59 | ì | 1 | | 1 | - 1 | | 1 | 0.74 | 1 1 |
| 20 | | | 0.68 | | i | - | i | Ť | 0.27 | 11 | | Ĺ | 0.66 | î | 1 | | 1 | - 1 | | I | 0.76 | 1 2 |
| 21 | | 20 | 0.68 | ì | i | i | i | i | 0.26 | | | | 0.62 | | ı | | Ĭ. | ĺ | | I | 0.77 | 1 2 |
| 22 | | | 0.57 | ř | 1 | i | | i | 0.28 | | | - | 0.57 | | i | | ĺ | 1 | | ī | 0.76 | 1 2 |
| 23 | | 200 | 0.67 | 100 | i | i | İ | i | 0.28 | | | | 0.63 | Ĺ | 1 | | i . | 1 | | 1 | 0.78 | 1 2 |
| 24 | | 7 | 0.69 | | ì | i | É | i | 0,29 | 100 | | | 0.60 | Ť | i | | -1 | 1 | | 1 | 0.76 | 1 2 |
| 25 | | 198 | 0.64 | 1 | ì | í | i | i | 0.28 | îï | | 2 | 0.63 | ĺ | Î | | î | i | | ĺ | 0.78 | 1 2 |
| 26 | | 1.7 | 0.57 | 100 | ř | - 1 | Í | i | 0.28 | iì | | | 0.56 | Î | i | | i | 1 | | 1 | 0.76 | |
| Description 6 | | | 0.70 | 1 | | | i i | 1 | 0.29 | | | 15 | 0.62 | ř | i | | î | i | | į. | 0.78 | - E |
| 27 | | 100 | | ľ | i | 1 | î | 1 | 0.28 | | | | 0.51 | ř | 1 | | i | î | | í | 0.78 | E |
| 28 | | | 0.58 | 1 | 1 | | i i | | 0.27 | 44 | | 7 | 0.60 | i | î | | i | i | | i | 0.78 | i 2 |
| 29 | | | 0.64 | i i | į. | 4 | i i | | 0.23 | 11 | | | 0.53 | i | î | | i | 1 | | 1 | 0.77 | (4. |
| 30 31 | | | 0.57 | į. | 1 | 1 | it: | 1 | 0.23 | 1.4 | | 10.5 | 0.56 | i i | 4 | | i | - 1 | | i | 0.77 | |

TABLE 3.1: DISINFECTION PROFILE (JAN 1986)

| 1 | | | | PRE-C | HLO | RINATIC | N | | | | [] | | | POST-CH | LORINATI | on | | | l | a k |
|------|---|---------|------|-------------|-----|---------|-----|---------|--------|------|-----|------|------|-----------------|------------|--------|------------|-----|------|---------|
| DATE | | C12 | | | 1 | S02 | I R | ESIDUAL | - 1000 | | 11 | c1 | | l NH3 | I I 502 | 7.5 | ESIDUAL Cl | 2 | | DATE |
| 1 | | | Dos. | W. DOSSACTO | į | 502 | 400 | | | | 100 | Dem. | | 170,000,000,000 | 1 302 | | [Comb. | 1 1 | otal | r |
| 1 1 | | 1 | 0.49 | 1 | 1 | | I | 1 | 1 | 0.21 | 11 | 1 | 0.49 | ĺ | 1 | ı | l | i | 0.74 | 1 |
| 2 | | | 0.62 | 1 | ű. | | 1 | î. | 1 | 0.22 | 1.1 | j. | 0.50 | ĺ | 1 | 1 | 1 | 1 | 0.75 | 2 |
| 3 1 | | -1 | 0.62 | Ĺ | i | | Ī | 1 | 1 | 0.23 | 1.1 | ı | 0.47 | ſ | 1 | 1 | 1 | 1 | 0.75 |] 3 |
| 4 1 | | 55.5 | 0.48 | i | 1 | | Î | 1 | 1 | 0.22 | 1.1 | 1 | 0.48 | ì | 1 | 1 | ı | 1 | 0.73 | 4 |
| 5 1 | | | 0.59 | í | î | | ì | ĺ | 1 | 0.23 | 1.1 | 1 | 0.64 | | 1 | i | 1 | ı | 0.75 | , 5 |
| 6 1 | | i | 0.60 | ì | Ĩ | | ì | 1 | 1 | 0.24 | 1.1 | 1 | 0.49 | Ĺ | 1 | 1 | 1 | 1 | 0.76 | (|
| 7 1 | | î | 0.59 | ĺ | Ĺ | | i . | 1 | 1 | 0.24 | 11 | 1 | 0.49 | l | 1 | 1 | 1 | 1 | 0.75 | - 5 |
| 8 1 | | Ĺ | 0.67 | i. | 1 | | F | Ĺ | 1 | 0.23 | 1.1 | ī | 0.57 | | 1 | Î | ı | ı | 0.76 | . 8 |
| 9 1 | | ř | 0.66 | ĺ | Ť | | Î | ì | 1 | 0.22 | 1.1 | Ī | 0.53 | | 1 | 1 | t | 1 | 0.77 | 9 |
| 10 1 | | i | 0.72 | ĺ | i. | | Ĺ | Î | 1 | 0.21 | 1.1 | J | 0.47 | | 1 | 1 | ı | ſ | 0.76 | 10 |
| 11 | | i | 0.55 | 1 | i | | j. | Ĭ. | I | 0.23 | 11 | 1 | 0.58 | ĺ | 1 | ĭ | i | ĺ | 0.77 | 11 |
| 12 | | ì | 0.48 | Î | i | | i | 1 | 1 | 0.23 | 1.1 | 1 | 0.50 | ĺ | Ĩ | ĵ- | l | 1 | 0.76 | 12 |
| 13 I | | i | 0.70 | ĺ | i | | Ī | Ť | 1 | 0.23 | 1.1 | 1 | 0.50 | 1 | 1 | 1 | ı | 1 | 0.74 | |
| 14 | | i | 0.56 | j | ì | | 1 | j | 1 | 0.24 | 1.1 | | 0.50 | | 1 | 1 | 1 | 1 | 0.74 | |
| 15 | | 1 | 0.55 | I | 1 | | 1 | J | 1 | 0.23 | 1.1 | 1 | 0.48 | İ | 1 | 1 | 1 | ſ | 0.75 | 1 15 |
| 16 | | 1 | 0.60 | 1 | 1. | | 1 - | 1 | 1 | 0.24 | 1.1 | -1 | 0.53 | l | 1 | J | 1 | ı | 0.78 | er er e |
| 17 | | 1 | 0.59 | j. | 1 | | 1 | 1 | 1 | 0.22 | 1.1 | 1 | 0.46 | Ļ | 1 | 1 | 1 | 1 | 0.76 | 17 |
| 18 | | 1 | 0.58 | F | 1 | | 1 | 1 | 1 | 0.22 | 1.1 | 1 | 0.54 | | 1 | 1 | I | 1 | 0.78 | 18 |
| 19 | | 1 | 0.41 | ſ | 1 | | ì | ì | 1 | 0.21 | 11 | 1 | 0.45 | * | 1 | 1 | ľ | 1 | 0.76 | E 00000 |
| 20 | | 1 | 0.60 | 1 | 1 | | 1 | 1 | 1 | 0.24 | 1.1 | 1 | 0.56 | | 1 | 1 | ı | 1 | 0.74 | 20 |
| 21 | | 1 | 0.67 | 1 | 1 | | 1 | 1 | 1 | 0.22 | 1.1 | 1 | 0.53 | ĺ | 1 | Ĭ | ı | 1 | 0.75 | 21 |
| 22 | | 1 | 0.57 | 1 | 1 | | 1 | 1 | 1 | 0.22 | 1.1 | 1 | 0.51 | | 1 | 1 | į. | Ĺ | 0.74 | 22 |
| 23 | | 1 | 0.62 | 1 | 1 | | i | 1 | 1 | 0.23 | 1.1 | I | 0.52 | l | 1 | 1 | 1 | 1 | 0.76 | 23 |
| 24 | | 1 | 0.64 | 1 | 1 | | 1 | 1 | 1 | 0.23 | 14 | . 1 | 0.48 | 1 | 1 | 1 | Î | ſ | 0.74 | 24 |
| 25 | | 1 | 0.56 | 1 | 1 | | 1 | i | 1 | 0.22 | 11 | 1 | 0.59 | ĺ | Ī | Ĭ | ı | 1 | 0.76 | 25 |
| 26 1 | | 107 | 0.46 | Ĭ | 1 | | Ì | 1 | 1 | 0.23 | 1.1 | ĵ | 0.55 | l | Í | 1 | T | t | 0.75 | 26 |
| 27 | | 3 | 0.59 | ì | 1 | | ì | I | 1 | 0.23 | 1.1 | 1 | 0.50 | | 1 | 1 | 1 | l | 0.75 | 27 |
| 28 | | i | 0.44 | 1 | Ĩ | | 1 | 1 | 1 | 0.24 | 1.4 | 1 | 0.39 | ĺ | Ĩ | i | 1 | 1 | 0.78 | 28 |
| 29 1 | X | Ä | 0.82 | 1 | i | | j | i | 1 | 0.23 | 1.1 | 1 | 0.66 | ĺ | ì | ,1 | ı | 1 | 0.74 | 29 |
| 30 1 | | Î | 0.53 | ì | 1 | | 1 | i | 1 | 0.23 | 1.1 | 1 | 0.51 | l | 1 | 1 | 1 | ł | 0.78 | 30 |
| 31 1 | | , , , , | 0.60 | 9 | 1 | | T | 1 | 1 | 0.23 | 11 | 1 | 0.50 | I | 1 | 1 | ì | 1 | 0.77 | |

TABLE 3.1: DISINFECTION PROFILE (FEB 1986)

| | # | | | | RINATIO | | | | | H | | | | 37500000 | 2070 | LORINA | | | | J-10. | | Į. | |
|------------|------|-----------|-------|--------|---------|---------|---------|------|-------|--------|------|----|------|----------|------|---------|-----|----|-----------|-------|-------|-------|----|
| DATE | (| C12 , | Ţ. | 1 | | l RE | ESIDUAL | C1 | 2 | 11 | C | 12 | | 1 | | Ī | 1 | RI | ESIDUAL C | 12 | | [DAC | ΓE |
| 1 | | Dem. | 1 | ŧ | | Free | Comb. | 1 | Total | 1.1 | Dem. | 1 | Dos. | I. | | 1 | 1 | | Comb. | l | Total | | |
| 1 I | 0.51 | 1 | 1 | | | I | 1 | 1 | 0.22 | | | | 0.51 | | | ĺ | 1 | | 1 | 1 | 0.77 | l | 1 |
| 2 1 | 0.52 | | ì | ĩ | | ì | ì | ì | 0.22 | 11 | | Î | 0.58 | 1 | | 1 | 1 | | 1 | 1 | 0.77 | l . | 2 |
| 2 1 | 0.65 | (2.1) | ì | î | | i | i | i | 0.22 | 1.1 | | ì | 0.54 | Ŧ | | 1 | 1 | | Ĩ | Ĺ | 0.76 | 1 | 3 |
| 0 1 | 0.49 | 2- | ì | i | | ì | i | ì | 0.22 | 100.00 | | î. | 0.43 | ì | | i |) | | ì | 1 | 0.78 | l . | 4 |
| 5 1 | 0.56 | - | í | i. | | ì | i i | i | 0.22 | H1 19 | | î | 0.49 | ì | | i | 1 | | 1 | 1 | 0.76 | ĺ | 5 |
| 5 1 | 0.62 | 1/2/ | 1 | | | î | i | ì | 0.22 | - 1 | | i | 0.54 | | | 1 | 1 | | ì | 1 | 0.77 | ĺ | 6 |
| 7 1 | 0.64 | | | 4 | | i | ĺ | ì | 0.24 | | | i | 0.50 | | | i | i | | Ī | ļ | 0.79 | ĺ | - |
| 8 1 | 0.51 | | i i | , s | | 1 | i . | i | 0.21 | 1.5 | | í | 0.50 | 163 | | į. | i | | Ī | ı | 0.79 | 1 | 8 |
| 9 1 | | 7 | i i | 1 | | 1 | 1 | 1 | 0.21 | 2 | | i | 0.51 | i | | i | i | | 1 | 1 | 0.77 | 1 | 9 |
| 450 P | 0.46 | | į. | 30 | | 4 | | USII | | ΤÌ | | i | 0.53 | ì | | i | i | | î | î | 0.77 | Î | 10 |
| 10 | 0.61 | 100 | 1 | l î | | i. | 1 | 1 | 0.22 | 1000 | | ì | 0.50 | ľ. | | î | i | | î | i | 0.79 | i : | 1: |
| 11 | 0.60 | | 1 | , it | | | 4 | | 0.23 | | | ì | 0.51 | | | ş. | i | | ì | Ť | 0.77 | | 1: |
| 12 | 0.61 | | 1 | | | Į. | 4 | | 0.23 | | | T. | 0.50 | | | 4 | i | | î | ì | 0.76 | | 1: |
| 13 | 0.48 | 6. | 1 | 1 | | d. V | 1 | il. | 0.22 | | | 1 | 0.49 | 100 | | ì | i | | i | i | 0.77 | 5 | 1 |
| 14 | 0.71 | | 1 | - 1 | | i. | li i | 1 | 0.23 | 18 8 | | 1 | 0.57 | - 1 | | Ņ. | i | | Ť | Ŷ | 0.80 | | 15 |
| 15 | | | 1 | 1 | | ! | | | | - C | | ł | 0.52 | - | | 5k | 9 | | 1 | 1 | 0.76 | 1 / | 16 |
| 16 | 0.49 | | ļ | į. | | Ţ. | 1 | 4 | 0.22 | | | 1 | | | | sh a | 1 | | ì | i | 0.76 | 0. | 1 |
| 17 | 0.60 | | į. | 1 | | 1 | d. | | 0.22 | | | Ļ | 0.54 | | | Tr. | | | 1 | ÷. | 0.77 | | 18 |
| 18 | 0.57 | 12.0 | -1, | 1 | | 1 | 1 | Ì | 0.22 | 4 | | 1 | 0.49 | - | | Į. | - 4 | | 4 | | 0.76 | | 19 |
| 19 | 0.52 | 1 - | 1 | 1 | | 1 | | 1 | 0.22 | 13. 2 | | 1 | 0.46 | 1 | | d. | | | 1 | | 0.77 | 0.0 | |
| 20 | 0.61 | 1 | I | 1 | | Ţ | I | 1 | 0.22 | (3) | | 1 | 0.53 | Į. | | Ŧ | | | 1 | 1 | | 5 1 | 20 |
| 21 | 0.61 | 1 | 1 | E | | 1. | 1 | ı | 0.22 | 100 | | l | 0.43 | 1 | | Ų. | | | 1 | 1 | 0.76 | | 21 |
| .22 | 0.61 | I | 1 | 1 | | 1 | 1 | t | 0.23 | 300 0 | | 1 | 0.57 | I | | 1 | 7 | | Ţ | 1 | 0.75 | | 22 |
| 23 | 0.55 | 1 | A. | 1 | | 1 | i | 1 | 0.23 | 1.1 | | 1 | 0.58 | 1 | | 1 | - 1 | | 1 | 1 | 0.78 | | 23 |
| 24 | 0.58 | l. | 1 | 1 | | 1 | 1 | 1 | 0.24 | 1.1 | | 1 | 0.49 | 1 | | 1 | Š | | 1 | I | 0.76 | | 2 |
| 25 | 0.60 | Ĺ | t | 1 | | 1 | 1 | 1 | 0.24 | 1.1 | | 1 | 0.52 | 1 | | 16 | - 1 | | d. | - 1 | 0.76 | 1.50 | 2 |
| 26 | 0.65 | Ì | ľ | 1 | | Ü | Í | 1 | 0.22 | 1 1 | | 1 | 0.51 | I | | 1 | - 1 | | 1 | 1 | 0.76 | 10 | 2 |
| 27 | 0.54 | Ť | l | ī | | Î | l | 1 | 0.21 | 1.1 | | Ì | 0.51 | I | | 1 | 1 | | .1 | 1 | 0.77 | | 2 |
| 28 | 0.80 | | 1 | 1 | | Ī | I | 1 | 0.21 | 1.1 | | 1 | 0.54 | í | | 1 | į | | 1 | 1 | 0.78 | 1 | 21 |
| 29 | | Ĭ. | Í | Ī | | Î | 1 | Ī | | 11 | | 1 | | 1 | | j. | | į. | 1 | ì | | 1 | 2 |
| 30 | | ì | î | i | | ì | Ĭ | Ì | | ΪÌ | | 1 | | 1 | | 1 | j | Ē. | 1. | 1 | | 1 | 30 |
| 31 | | 10- | i | í | | i | í | î | | ĹΤ | | i | | Î | | I. | | | Ī | 1 | | 1 | 3 |

TABLE 3.1: DISINFECTION PROFILE (MAR 1986)

| 1 | 10 To 20 To | | | PRE-C | HLOF | RINATIO | N | | | | 11 | | | | POST-C | HLORINA | TION | ! | | | . [|
|-------------|---|------|------|-----------|------|---------|---------|---------|------------|------|----------|------|-----|------|----------------|-----------|------|----------|-------------|-------|---------|
| I Date I | | :12 | | | 1 | 502 | F-1 | ESIDUAL | C 1 | 2 | ii | | :12 | | l I NH3 | 502 | | RE | ESIDUAL C12 | | DAT |
|] [| Dem. | | Dos. | 5 | İ | 502 | Free | | | | 200 | Dem. | 1 | Dos. | Man Imman Anna | Ī | | Free | [Comb. | Total | . i |
| 1 I | | 1 | 0.57 | I | 1 | | 1 | Ĭ | 1 | 0.23 | ii | | 1 | 0.52 | T | 1 | 1 | e k | 1 1 | 0.78 | |
| 2 1 | | | 0.50 | 1 | ı | | Î | 1 | 1 | 0.22 | 1.1 | | 1 | 0.48 | 1 | 1 | 1 | h. | 1 1 | 0.76 | |
| 3 i | | Î | 0.59 | 1 | 1 | | 1 | ı | ł | 0.23 | 1.1 | | 1 | 0.49 | 1 | 1 | ì | | 1 1 | 0.78 | 1 |
| 4 1 | | | 0.56 | Ė | 1 | | İ | 1 | 1 | 0.23 | 1.1 | | 1 | 0.50 | 1 | 1 | 1 | f. C | 1 1 | 0.76 | 1 |
| 5 1 | | | 0.62 | ì | i | | ľ | Î. | 1 | 0.23 | 1.1 | | 1 | 0.49 | 1 | 1 | 1 | | 1 1 | 0.78 | Î |
| 6 1 | | 1.5 | 0.59 | ì | 1 | | 1 | 1 | ł | 0.22 | 1.1 | | 1 | 0.53 | 1 | i | 1 | | 1 1 | 0.77 | 1 |
| 7 1 | | 7 | 0.68 | i | î | | Ì | Į. | ł | 0.22 | 1.1 | | 1 | 0.48 | 1 | 1 | 1 | Ĉ. | 4 1 | 0.76 | 1 |
| 8 1 | | | 0.55 | ì | ì | | | 1 | 1 | 0.22 | 11 | | 1 | 0.48 | 1 | 1 | 1 | į. | 1 1 | 0.75 | 1 |
| 9 1 | | - | 0.55 | Ì | ì | | 1 | ì | 1 | 0.22 | 1.1 | | 1 | 0.56 | Ĭ | 1 | 1 | | 1 1 | 0.75 | 1 |
| 10 | | ì | 0.63 | ì | í | | ì | Î | i | 0.22 | 1.1 | | 1 | 0.50 | 1 | 1 | | | 1 1 | 0.75 | 1 1 |
| 11 | | | 0.57 | i | î | | 1 | î | 1 | 0.24 | 11 | | 1 | 0.46 | 1 | 1 | | | 1 1 | 0.77 |) 1 |
| 12 | | | 0.57 | 1 | i | | i | í | 1 | 0.23 | 11 | | 1 | 0.52 | | ĺ | | | i i | 0.75 | 1 1 |
| 13 | | î | 0.61 | i | - î | | ì | i i | î. | 0.23 | 11 | | ĺ | 0.48 | Î | ì | | | 1 1 | 0.78 | 1 1 |
| 14 | | 1 | 0.60 | 1 | 1 | | Å | | 1 | 0.23 | 11 | | î | 0.49 | Î | ř | į. | | 1 1 | 0.77 | 1 1 |
| 15 | | à | 0.61 | | i i | | i | ì | i | 0.22 | 100 | | i | 0.54 | İ | i | | | ì î | 0.76 | 1 1 |
| 16 | | ì | 0.55 | ì | 1 | | 1 | î | i | 0.24 | 72 (2) | | ì | 0.55 | ì | Ŷ | î | | i i | 0.77 | 1 1 |
| 17 | | 1 | 0.54 | 1 | | | Í | î. | i | 0.22 | | | ï | 0.47 | ì | î | IIG | 70 | î î | 0.78 | 1 1 |
| 120 | | | 0.62 | | 1 | | ř | i | 1 | 0.21 | 160 | | 1 | 0.50 | i | | | | i i | 0.76 | 1 1 |
| 18 | | - 50 | 0.56 | 1 | 1 | | t I | * * | 1 | 0.21 | 100 | | 1 | 0.49 | | i i | IŽ | | i i | 0.76 | |
| 19 | | | | di E | 1 | | £ | 13 | S. | 0.22 | 15 15 | | | 0.55 | i | i | 19 | | i i | 0.75 | - |
| 20 [| | 1 | 0.64 | | | | Š. | 7 | 1 | 0.25 | | | T. | 0.46 | 154 | î | 10 | Si Gr | 1 1 | 0.77 | - S (H) |
| 21 | | | 0.61 | · | | | 1 | i. | 1 | 0.25 | | | | 0.53 | Ž. | | | | | 0.77 | |
| 22 | | T. | 0.57 | k c | 1 | | | Trans. | ŧ. | 0.21 | | | 1 | 0.57 | | į. | | | ; ; | 0.76 | |
| 23 | | I | 0.61 | ł. | ļ | | | i i | 10 | 0.23 | | | 1 | 0.48 | T | 1 | 70 | H = | 4 1 | 0.77 | 7.0 |
| 24 | | - | 0.62 | 1 | ı | | k I | i. | 1 | 0.23 | | | 1 | 0.40 | 1 | į. | 108 | | 1 | 0.76 | |
| 25 | | - | 0.55 | 1 | 1 | | 1 | ţ. | 1 | 0.22 | 2 30 | | 1 | 0.51 | | \$ | | | 4 | 0.76 | |
| 26 | | de | 0.62 | 1 | J | | | 1 | 1 | 0.21 | | | 4 | 0.56 | | ill. | 18 | | 1 | 0.77 | (2) |
| 27 | | 1 | 0.63 | 1 | 1 | | li i | ek. | 1 | | N 050 | | 10 | | (8) | di T | No. | | 1 | 0.77 | - 30 |
| 28 | | 1 | 0.55 | 1 | ı | | l. | * | I | 0.23 | 131 (122 | | I I | 0.41 | 77 | | 9 | | | 0.77 | - A |
| 29 | | 1 | 0.67 | I | 1 | 1 | | Į. | 1 | 0.23 | - 15 | | | 0.56 | | 1 | | | 1 1 | | |
| 30 | | 1 | 0.54 | 1 | 1 | | 1 | l . | L | 0.23 | - | | 4 | 0.50 | | | 18 | i e | 4 1 | 0.76 | |
| 31 | | 1 | 0.56 | 1 | 1 | | 1 - | L | 1 | 0.24 | 1.1 | | 1 | 0.46 | 1 | 4 | - | L | 1 | 0.77 |] 3 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (APR 1986)

| 1 | | | | PRE-C | HLO | RINATIO | ON | | | | 11 | | | | | HLORINATI | ON | | | | 1 |
|-------------|------|-------|------|--------|-------|---------|------|---------|-----|------|-------|------|----|------|-------------------|-----------|------|-----------|-----|-----------|--------|
| I DATE I | | :12 | | J | 1 | 228 | | ESIDUAL | cl | 2 | 11 | C. | 12 | | t | I. | R | ESIDUAL C | :12 | | DATE |
| ļ | Dem. | | | i | 1 | | Free | Comb | . 1 | | 1.1 | Dem. | 1 | Dos. | 1 | 502 | Free | Comb. | Ī | Total | L L |
| 1 1 | | 1 | 0.59 | | I | | | I | | 0.24 | 1 1 | | | 0.49 | | | 1 | 1 | I | 0.76 | 1 |
| 2 1 | | 10 | 0.54 | | ī | | ı | 1 | 1 | 0.24 | 1.1 | | 1 | 0.47 | Í | 1 | 1 | Ī | - 1 | 0.77 | 1 : |
| 3 1 | | | 0.55 | i | 1 | | Î | i | 1 | 0.76 | 1.1 | | 1 | 0.49 | l | Ī | Ĭ. | 1. | 1 | 0.81 | 1 |
| 4 1 | | | 0.52 | i | 1 | | Ĩ | 1 | 1 | 0.23 | 11 | | 1 | 0.48 | I | 1 | 1 | 1 | į. | 0.78 | 1 |
| 5 1 | | 1.5 | 0.57 | i | i | | i | i | 1 | 0.27 | 1.1 | | ŀ | 0.52 | 1 | 1. | 3 | Ü | 1 | 0.76 | 1 |
| 6 1 | | | 0.61 | ì | i | | Ì | 1 | 1 | 0.26 | 1.1 | | 1 | 0.57 | l | Ŧ | Í. | T. | 1 | 0.76 | 1 |
| 7 1 | | | 0.54 | i | i | | Î | 1 | 1 | 0.27 | 1.1 | | 1 | 0.46 | l . | ıl. | 1 | 1 | 1 | 0.77 | t : |
| 8 1 | | | 0.62 | Ĭ | i | | | 1 | 1 | 0.26 | 11 | | 1 | 0.53 | 1 | l | 1 | 1 | 1 | 0.76 | 1 3 |
| 9 1 | | (5) | 0.59 | 70 | î | | i | 1 | 1 | 0.22 | 1.1 | | 1 | 0.51 | I | 1 | 1 | 1 | 1 | 0.76 | 1 |
| 10 i | | | 0.66 | 577 | Ť | | i | Ĺ | 1 | 0.25 | 1.1 | | 1 | 0.54 | 1 | 1 | ı | ď | 1 | 0.75 | 1 10 |
| 11 | | | 0.66 | | | | Ì | Î | ï | 0.23 | 1.1 | | 1 | 0.54 | ſ | 1 | 1 | 1 | 1 | 0.75 | 1 1 |
| 12 | | 251 | 0.71 | i | i | | Î | i | T | 0.26 | 1.1 | | 1 | 0.55 | 1 | 1 | 1 | i | - 1 | 0.78 | 13 |
| 13 | | | 0.60 | ì | í | | î | Ĺ | 1 | 0.27 | 1.1 | | 1 | 0.56 | ĺ | 1 | 1 | ï | 1 | 0.77 | 1 1: |
| 14 | | | 0.65 | 1 | 3 | | í | Î | i | 0.27 | 1.1 | | 1 | 0.49 | 1 | 1 | 1 | 1 | T | 0.79 | 1 1 |
| 15 1 | | | 0.64 | 1 | ì | | i | Ì | 1 | 0.26 | 1.1 | | T | 0.61 | 1 | 1 | I. | 1 | 1 | 0.80 | 1 1 |
| 16 | | | 0.51 | i | i | | í | ľ | 1 | 0.26 | 1.1 | | 1 | 0.47 | Î | I | 1 | Ĩ. | 1 | 0.74 | 1 1 |
| 17 | | | 0.63 | i | i | | ì | î | 1 | 0.28 | 11 | | 1 | 0.56 | 1 | Î | I. | I | -1 | 0.76 | 1 1 |
| 18 | | | 0.58 | Ti . | Ť | | ì | 1 | i | 0.28 | 1.1 | | 1 | 0.47 | 1 | I | T | 1 | 1 | 0.76 | 1 1 |
| 19 I | | 18 | 0.60 | ì | i | | ì | i. | ī | 0.25 | 1.1 | | 1 | 0.54 | 1 * | ľ. | j | 1 | - 1 | 0.76 | 1 1 |
| 20 1 | | | 0,65 | i | - i | | ì | ì | Ť | 0.25 | 1.1 | | 1 | 0.59 | i. | Í | 1 | Ī | ı. | 0.76 | 1 2 |
| 21 | | | 0.62 | î. | í | | i | ì | i | 0.28 | 11 | | Ī | 0.53 | Ī | 1 | 1 | 1 | 1 | 0.75 | 1 2 |
| 22 | | | 0.68 | í | i | | ì | ř | 1 | 0.28 | | | Î | 0.55 | i | Ĩ | 1 | Ĩ | 1 | 0.77 | 1 2 |
| 23 | | | 0.67 | i | Ė | | ï | Î | ì | 0.28 | 155 | | Î | 0.54 | The second second | Î | | 1 | ı | 0.79 | 1 2 |
| 24 1 | | | 0.60 | ì | i | | í | i | i | 0.26 | 21.8 | | Ī | 0.57 | | Í | Ĩ | 1 | ı | 0.75 | 1 2 |
| 25 1 | | | 0.57 | ì | î | | î | ì | ì | 0.26 | | | Ĺ | 0.46 | t | ı | | 1 | 1 | 0.76 | 1 2 |
| 26 1 | | 100 | 0.62 | ř | i | | i. | ï | i | 0.23 | | | 1 | 0.57 | ŀ | Î | | Î | 1 | 0.75 | 2 |
| 27 | | 200 | 0.58 | 4 4 | ı. | | 1 | i | 1 | 0.22 | 10110 | | i | 0.39 | Î | i | Î | ı | 1 | 0.75 | 1 2 |
| 28 1 | | 45 | 0.57 | 4 | î | | i | i | i | 0.24 | | | i | 0.48 | i | ĭ | 1 | 1 | 1 | 0.75 | 1 2 |
| 29 I | | | 0.56 | 90 | | | ì | i | Ť | 0.24 | - | | î | 0.55 | i | i | 1 | 1 | 1 | 0.76 | 1 2 |
| 30 I | à | 3,000 | 0.58 | i | i | | Ť | ř | i | 0.26 | 200 | | i | 0.53 | Î | i | 1 | ì | 1 | 0.76 | |
| 30 j | | 1 | 0.50 | | 1 | | 10 | i. | 55. | 0.20 | 1 1 | | 1 | | i | | i i | á | 1 | 100 miles | 1 3 |

TABLE 3.1: DISINFECTION PROFILE (MAY 1986)

| j | | | التقالدان الوادية الرادان | PRE-C | HLO | RINATIO | N | | | | | | | | POST-C | HLORINAT | TION | l | | | - 1 | |
|------|----|-------------------|---------------------------|--------------|-----|---------|-------|---------|-------|--|--------|-----|-----|------|---------------------|-----------|------|-------|------------|-------|---------|------|
| DATE | | - - C12 | | I 1 | ı. | 000 | | RESIDUA | L C | A CONTRACTOR OF THE PROPERTY O | ii | | :12 | | | 502 | | RE | SIDUAL Cl2 | 1 | | DATE |
| 1 | 20 | | Dos. | 2 (20/19/20) | ì | SO2 | | | | Total | 18 24 | | | | THE THOMAS AND SHOP | 1 502 | | Free | Comb. | Total | - , | |
| 1 1 | | I | 0.66 | 1 | · | | I | 1 | 1 | 0.25 | 11 | | 1 | 0.53 | I | 1 | | | l | 0.76 | | 1 |
| 2 1 | | | 0.61 | | Ť | | î | Ť | i | 0.24 | 11 | | i | 0.58 | i | Ì | | ľ | Î | 0.76 | 1 | 2 |
| 3 1 | | 120 | 0.57 | Î | î | | ì | i | í | 0.24 | 11 | | i | 0.52 | | i | 10 | ľ | ì | 0.74 | I I | 3 |
| 4 | | | 0.76 | Ī | Ŧ | | î | i | 1 | 0.27 | Ĥ | | ì | 0.61 | i | Î | - 1 | Î | Î | 0.73 | 1 | 4 |
| 5 1 | | | 0.60 | Î | î | | i | ì | å | 0.27 | 11 | | ĺ | 0.48 | ì | ì | | | ì | 0.77 | 1 | 5 |
| 6 1 | | - | 0.58 | Í | Ť | | î | i | 1 | 0.23 | 1.1 | | 1 | 0.50 | ì | Ť | 1 | | 1 | 0.73 | 1 | 6 |
| 7 1 | | 351 | 0.55 | Î | Ĩ | | î | Î. | ì | 0.24 | TI | | 1 | 0.51 | Ī | 1 | | ľ | j | 0.73 | 1 | 7 |
| 8 1 | | | 0.62 | t | Ť | | î | i | i | 0.24 | ΪÎ | | ì | 0.51 | ĺ | ì | | l | 1 | 0.75 | 1 | 8 |
| 9 1 | | 2 | 0.60 | ĺ | i | | i | î | î | 0.22 | ΪĨ | | 1 | 0.53 | | 1 |) | ĺ | 1 | 0.74 | 1 | 9 |
| 10 i | | 12 | 0.59 | Î | Ť | | Î | Ī | Ĺ | 0.24 | 11 | | ī | 0.47 | ì | Î | 1 | ĺ | j. | 0.74 | 1 | 10 |
| 11 | | Ť | 0.63 | Í | Î | | Î | 1 | î | 0.24 | 11 | | ĺ | 0.62 | i | ì | | ľ | 1 | 0.75 | 1 | 11 |
| 12 | | í | 0.58 | ĺ | Ť | | 1 | 1 | î | 0.24 | 11 | | Ĩ | 0.50 | Î | Ĩ | | l | 1 | 0.77 | 1 | 12 |
| 13 | | i | 0.61 | i | Ĺ | | ì | I | Ī | 0.25 | 1.1 | | Î | 0.56 | | 1 | | l | 1 | 0.74 | 1 | 13 |
| 14 | | i | 0.55 | Ì | 1 | | 1 | 1 | 1 | 0.25 | 11 | | ī | 0.49 | İ | Ĭ | | | I | 0.75 | 1 | 14 |
| 15 | | Ē | 0.57 | Í | 1 | | ì | Í | Î | 0.23 | 1.1 | | Ī | 0.50 | 1 | j | 1 | | ł | 0.76 | 1 | 15 |
| 16 | | 1507 | 0.59 | Í | Ĺ | | 1 | Ī | i | 0.23 | 11 | | 1 | 0.54 | ľ | 1 | | | 1 | 0.75 | 1 | 16 |
| 17 | | 4. | 0.66 | Ï | 1 | | î | 1 | ĵ | 0.24 | 11 | | 1 | 0.57 | ŀ | Ĩ | ĺ | | ı | 0.74 | T | 17 |
| 18 | | î | 0.62 | ľ | i | | ì | Ĩ | 1 | 0.23 | ΪÌ | | 1 | 0.59 | ì | ĵ | | | 1 | 0.77 | 1 | 18 |
| 19 | | î | 0.80 | 1 | î | | i | ì | i | 0.24 | 11 | | 1 | 0.70 | 1 | 1 | | ĺ | 1 | 0.77 | 1 | 19 |
| 20 1 | | ì | 0.63 | Î | î | | Ī | 1 | Ĩ | 0.25 | 11 | 40 | 1 | 0.50 | 1 | T | j | | Î | 0.77 | 1 | 20 |
| 21 | | î | 0.65 | T | î | | I | i | 1 | 0.23 | 11 | | 1 | 0.59 | 1 | Î | j | | Î | 0.75 | 1 | 21 |
| 22 | | i | 0.66 | ì | 1 | | Í | Î | ì | 0.23 | 1.1 | | 1 | 0.50 | l | 1 | j | | 1 | 0.75 | 1 | 22 |
| 23 | | Ť | 0.56 | Ĺ | Î. | | 1 | 1 | 1 | 0.23 | 1.1 | | Ĺ | 0.54 | ľ | Ť | ì | | 1 | 0.78 | 1 | 23 |
| 24 | | i | 0.66 | ı | 1 | | 1 | i | i | 0.24 | 11 | le. | 1 | 0.59 | 1 | ĺ | | ĺ | i | 0.78 | 1 | 24 |
| 25 1 | | i | 0.69 | ì | ì | | 1 | i | i | 0.23 | 11 | | Ì | 0.58 | ĺ | ì | i | Ĺ | 1 | 0.78 | 1 | 25 |
| 26 1 | | 1 | 0.66 | i | i | | 1 | -1 | Í | 0.22 | 11 | | 1 | 0.55 | ſ | Ī | 1 | ľ | J | 0.74 | 1 | 26 |
| 27 | | i | 0.55 | f | i | | Î | i | i | 0.24 | 11 | | Î | 0.49 | - | ì | | | 1 | 0.76 | 0. 9 | 27 |
| 28 | | 1 | 0.62 | Ì | 7 | | 1 | Ï | j | 0.25 | Ü | | ì | 0.54 | | i | | Ì | 1 | 0.78 | 1 | 28 |
| 29 | | î | 0.57 | i | ĺ | | Í | 1 | Ī | 0.23 | ΪÌ | | ĩ | 0.50 | | i | | | 1 | 0.76 | | 29 |
| 30 | | j | 0.67 | ì | î | | Ĩ | Ĭ. | î | 1903 1924-0000 | -1.1 | | ř | 0.53 | Î | 1 | 1 | | 1 | 0.77 | 100 | 30 |
| 31 | | - 1 | 0.56 | | i | | ì | | 1 | 0,25 | 18 753 | | 2 | 0.52 | | i i | 3 | l | ì | 0.76 | 100 | 31 |

WATER PLANT OPTIMIZATION STUDY UNION WATER SYSTEM

TABLE 3.1: DISINFECTION PROFILE (JUN 1986)

| í | | | | PRE-CH | ILORINAT | ION | | | | | 1. | | | | POST- | | nc | | | ļ |
|------|------|--------|------|--------|----------|-------|----|--------|-----|------|-------|------|-------|------|-------|-----|--------|------------|--------|------|
| DATE | | 12 | | | 1 | ! | RE | SIDUAL | C12 | 1 | ì | C | 12 | | 1 | 1 | RE | ESIDUAL Cl | 2 | DATE |
| 1 | Dem. | | | | 1 502 | | | | | | | Dem. | | Dos. | t | £ | | Comb. | | i |
| 1 1 | | | 0.63 | | | i | | | | 0.24 | | | i | 0.58 | | 1 | | 1 | 1 0.75 | |
| 2 1 | | | 0.68 | | | 1 | | i | i | 0.23 | - | | i | 0.58 | | i | Ï | ì | 0.76 | 1 2 |
| 3 1 | | | 0.60 | | ì | 1 | | ì | ì | 0.24 | 1 | | î | 0.50 | i | ì | i i | î | 0.77 | 1 4 |
| 2 1 | | 3. | 0.63 | - | 1 | i | | i | ř. | 0.23 | 100 | | i | 0.52 | i | i i | í | i | 0.74 | 1 4 |
| 5 I | | | 0.55 | 1 | 1 | Ţ, | | i | î | 0.24 | i | | i | 0.53 | 750 | Ť | i | î | 0.76 | 1 5 |
| 5 1 | | 8 | 0.70 | 1 | į. | ì | | î | į. | 0.25 | i | | î | 0.55 | 100 | i i | ì | ì | 0.77 | 1 6 |
| 7 1 | | | 0.59 | 1 | i | î | | i | î | 0.24 | -31.0 | | i | 0.52 | | î | Ĩ | I | 0.78 | 1. 7 |
| 8 1 | | | 0.50 | ı. | ì | Î | | i | ì | 0.23 | i | | ì | 0.48 | Î | i | i | 1. | 0.75 | 1 8 |
| 9 1 | | 100 | 0.64 | 1 | i | ì | | i | Ĺ | 0.24 | 13 | | ì | 0.52 | î. | ĺ | Ī | 1 | 0.76 | 1 5 |
| 10 | | 200 | 0.64 | è | i | Ť | | i | ì | | 1 | | Î. | 0.57 | Î | ì | Î | 1 | 0.78 | 1 10 |
| 11 | | | 0.58 | | ì | i | | i | i | 0.23 | 1 | | Î | 0.46 | 1 | ì | Ĺ | Î | 0.76 | 1 13 |
| 12 | | 175 | 0.56 | | Ĭ | i | | ì | i | 0.24 | i | | ì | 0.52 | İ | ĺ. | 1 | ľ | 1 0.76 | 1 12 |
| 13 | | 8 | 0.63 | | Ĺ | ï | | i | î | 0.22 | 1 | | i | 0.54 | i | Ĩ | ī | | 0.76 | 1 13 |
| 14 | | | 0.71 | i. | T . | T | | î. | å | 0.25 | 200 | | î | 0.68 | i | ì | Î | Ī | 0.75 | 1 14 |
| 15 1 | | | 0.57 | i . | | i | | Î | Î | 0.24 | 1 | | Ĺ | 0.56 | 1 | T | Ĭ. | 1 | 0.75 | 15 |
| 16 | | 77 | 0.68 | - 6 | | i | | i | ī | 0.24 | 1 | L | 1 | 0.54 | 1 | 1 | I | L | 0.77 | 1 16 |
| 17 | | 8 | 0.67 | | ì | Ĺ | | ì | ì | 0.25 | 1 | | Ī | 0.57 | Ė | 1 | Í | 7 | 0.76 | 1 1 |
| 18 | | | 0.69 | | i. | 1 | | | 1 | 0.25 | 1 | | 1 | 0.58 | i | 1 | Ĭ | 1 | 0.77 | 1 18 |
| 19 | | | 0.59 | | | i | | ì | 1 | 0.22 | 1 | | 1 | 0.51 | 1 | 1 | T . | 1 | 0.78 | 1 19 |
| 20 | | | 0.64 | | i | i | | ì | 1 | 0.21 | | | Ė | 0.53 | 1 | 1 | i | ĺ | 0.75 | 1 20 |
| 21 | | | 0.64 | | ì | î | | Ì | T | 0.24 | 1 | | Ī | 0.57 | 1 | 1 | Ĺ | Ĭ | 0.74 | 1 27 |
| 22 | | | 0.69 | č. | i | Ť | | Î | 1 | 0.23 | 1 | | Ĭ | 0.56 | 1 | 1 | li . | t | 0.76 | 1 22 |
| 23 | | - | 0.62 | TR. | ì | i | | i | ì | 0.20 | 1 | ĺ | Ī | 0.53 | I | 1 | I | Γ × | 0.74 | 1 23 |
| 24 | | 30 | 0.64 | | Ī | 1 | | 1 | 1 | 0.22 | 1 | | Ī | 0.55 | I | T | 1 | ì | 1 0.74 | 1 2 |
| 25 | | | 0.70 | | ì | i | | I | 1 | 0.24 | 1 | | Ì | 0.56 | 1 | 1 | Ī | I | 0.76 | 1 2 |
| 26 | | | 0.63 | ř | | i | | Ì | 1 | 0.23 | 1 | Ĭ. | 1 | 0.53 | 1 | 1 | 1 | 1 | 0.78 | 1 20 |
| 27 | | 199 | 0.56 | Í | Í | 1 | | Î | 1 | 0.24 | | | 1 | 0.52 | 1 | Ī | Ĩ | Ĺ | 1 0.77 | 1 2 |
| 28 | | | 0.69 | ì | i | i | | Ĩ | 1 | 0.26 | 1 | | 1 | 0.52 | Í | 1 | I. | Ĭ | 0.77 | 1 2 |
| 29 1 | | | 0.57 | | i | Ŷ | | 1 | ĺ | 0.25 | 1 | | 1 | 0.55 | | Ĩ | 1 | Í | 0.76 | 2 |
| 30 | | | 0.55 | | Ì | i | | Í | 1 | 0.27 | i | | İ | 0.49 | - | Ï | E | 1 | 0.74 | |
| 31 | | 1 | | Ė | Î | ĺ | | ſ | Ĺ | | 1 | i. | 1 | | Î | 1 | T. | ĺ | I | 1 3 |

TABLE 3.1: DISINFECTION PROFILE (JUL 1986)

| 1 | | | | PRE-C | CHLC | RINATIO | N | | pi, som | | 11 | | | | POST-C | HLO: | RINATIC | N | | | | | | I | |
|------------|------|---------|------|-------------|-------|---------|-----|---------|---------|------|-----|------|---|------|--------|------|---------|------|------|-----|----------|-----|-----|-----|------|
| I I ATE | | C12 | | | I | | 701 | ESIDUAL | Cl | .2 | i | C1: | | | | 1 | S02 | 1 | RE | ESI | DUAL C12 | | | , , | DATE |
| 1 | Dem, | | | N 1925/9076 | 1 | so2 | 8 | | | | 100 | Dem. | | | 40. | Ì | 302 | i | Free | 1 | Comb. | То | tal | ĺ. | |
| 1 1 | | I | 0.57 | | I | | 1 | 1 | i | 0.24 | 11 | 1 | | 0.47 | Ĺ | Ĭ | | ı | | Ì | 1 | 0 | .74 | ì | 1 |
| 2 1 | | 350 | 0.50 | 153 | ī | | ř | Ĩ | Ĭ | 0.22 | 11 | Ī | | 0.41 | Ī | 1 | | 1 | | 1 | 1 | 0 | .74 | 1 | 2 |
| 3 1 | | | 0.59 | | î | | Ĭ | 1 | ì | 0.24 | 1 | Ï | | 0.56 | Î. | 1 | | 1 | | 1 | 1 | 0 | .76 | 1 | |
| 4 1 | | 3.00 | 0.59 | - 19 | ì | | i | T . | 1 | 0.23 | 1 | 1 | | 0.47 | 1 | 1 | | Î | | 1 | | 0 | .78 | 1 | |
| 5 1 | | | 0.58 | | ì | | i | ï | Ī | 0.24 | 11 | ĺ | | 0.50 | ľ | 1 | | 1 | | 1 | Í | 0 | .77 | į. | 5 |
| 6 1 | | 175 | 0.57 | | 1 | | î | i | Ĭ | 0.24 | 1 | 1 | | 0.50 | 1. | 1 | | 1 | | 1 | 1 | 0 | .77 | • | |
| 7 1 | | - 1 | 0.58 | 7 | 1 | | 1 | 1 | Ī | 0.23 | 1 | 1 | | 0.50 | 1 | 1 | | ¥. | | 1 | . 1 | 0 | .75 | ł | 1 |
| 8 1 | | | 0.51 | 350 | î | | ý. | L | Ĭ | 0.22 | 11 | i | k | 0.49 | Ī | 1 | | 1 | | 1 | Ĩ | 0 | .76 | 1 | |
| 9 1 | | 978 | 0,57 | | î | | ì | 1 | Ī | 0.22 | 1 | i | | 0.52 | 1 | 1 | | 1 | | 1 | 1 | 0 | .75 | 1 | |
| 10 i | | 1070 | 0.56 | | ì | | Î. | 1 | 1 | 0.24 | | 1 | | 0.48 | 1 | 1 | | Ji - | | 1 | 1 | 0 | .75 | 1 | 1 |
| 11 1 | | - | 0.61 | | 1 | | Ť | 4 | 1 | 0.23 | 1. | Î | | 0.51 | Î | 1 | | 1 | | 1 | Ĵ | 0 | .78 | 1 | 1 |
| 12 | | i | 0.50 | 1 | Î | | ì | 1 | 1 | 0.25 | | 1 | | 0.55 | ľ | 1 | | ï | | 1 | 1 | 0 | .75 | 1 | 1 |
| 13 I | | | 0.67 | | 1 | | 1 | 1 | Ť | 0.27 | 1 | 1 | | 0.38 | 1 | 1 | | 1 | | 1 | 1 | 0 | .76 | 1 | 1 |
| 14 1 | | i | 0.61 | | 1 | | 1 | I. | 1 | 0.22 | 1.1 | Î | | 0.54 | Ĭ | ľ | | 1 | | 1 | 1 | 0 | .77 | 1 | 1 |
| 15 I | | ï | 0.62 | Ī | 1 | | Î | 1 | ı | 0.22 | 1.1 | 1 | | 0.52 | Ì | 1 | | 1 | | 1 | 1 | 0 | .78 | 1 | 1 |
| 16 1 | | 100 | 0.62 | | 1 | | ì | 1 | 1 | 0.24 | 1.3 | 1 | | 0.55 | 1 | 1 | | 1 | | 1 | 1 | 0 | .79 | ı | 1 |
| 17 | | 1 | 0.58 | Ī | 1 | | ľ | 1 | 1 | 0.22 | | ŀ | | 0.48 | ĵ | 1 | | i | | ı | Ĩ | 0 | .77 | 1 | 1 |
| 18 i | | ì | 0.61 | î | 1 | | Î | ì | Ĩ | 0.24 | 1 | 1 | | 0.55 | Ĭ | 1 | | 1 | | 1 | 1 | 0 | .74 | ı | 1 |
| 19 i | | ì | 0.57 | ì | i | | Î | 1 | Ĺ | 0.23 | 1 | 3 | | 0.49 | 1 | 1 | | 1 | | 1 | 1 | 0 | .76 | 1 | 1 |
| 20 | | ì | 0.61 | ì | 1 | | 1 | 1 | 1 | 0.24 | 1.1 | 1 | E | 0.52 | 1 | 1 | | 1 | | 1 | Ĩ | 0 | .76 | 1 | 2 |
| 21 1 | | | 0.64 | | 1 | | 1 | 1 | 1 | 0.22 | 1 | 1 | | 0.54 | Î | I | | 1 | | 1 | 1 | 0 | .78 | 1 | 2 |
| 22 | | Î | 0.64 | ì | ı | | Î | 1 | 1 | 0.23 | 1 1 | 1 | | 0.55 | 1 | 1 | | 1 | | 1 | 1 | 0 | .78 | 1 | 2 |
| 23 | | 100 | 0.63 | 2238 | Ī | | ì | Ĭ. | Ĩ | 0.24 | 1 | 1 | Ē | 0.55 | Ť | 1 | | 1 | | 1 | 1 | 0 | .80 | 1 | 2 |
| 24 | | | 0.59 | | 1 | | 1 | 1 | 1 | 0.23 | 1 | j | | 0.54 | 1 | ı | | 1 | | 1 | 1 | 0 | .79 | 1 | 2 |
| 25 1 | | 1.00 | 0.59 | 275 | 1 | | 1 | 1 | 1 | 0.22 | 1 | 1 | | 0.55 | 1 | 1 | | Î | | 1 | 1 | 0 | .76 | 1 | 2 |
| 26 | | - 2 | 0.60 | | î | | ì | 1 | 1 | 0.21 | 1 | . 1 | | 0.56 | 1 | 1 | | 1 | | 1 | 1 | 0 | .78 | 1 | 2 |
| 27 | | 0.5 | 0.72 | | ı | | 1 | 1 | 1 | 0.23 | 1 | 1 | | 0.66 | Ĩ | I | | 1 | | 1 | ĺ | . 0 | .75 | 1 | 2 |
| 28 | | 1 | 0.58 | | Ĩ | | Ĭ | 1 | 1 | 0.25 | 1 | j | | 0.53 | I | 1 | | 1 | | Ī | Ì | 0 | .79 | 1 | 2 |
| 29 | | Í | 0.63 | 11.00 | Î | | 1 | ī | Î | 0.23 | 1 | J | | 0.54 | 1 | 1 | | 1 | | 1 | 1 | 0 | .77 | 1 | 2 |
| 30 1 | | ì | 0.62 | | î | | Ĭ | 1 | 1 | 0.23 | 1 | 1 | | 0.51 | 1 | 1 | | 1 | | 1 | 1 | 0 | .75 | 1 | 3 |
| 31 1 | | i | 0.57 | | ī | | 1 | 4 | 1 | 0.23 | L | i | | 0.52 | Î | ĺ | | 1 | | 1 | S. | 0 | .75 | 1 | 3 |

TABLE 4.0: T&O CONTROL ALKALINITY ADJ. & FLUORIDATION SUMMARY

| | | | | | | | | | 1004 | | | 1983 | |
|-----------|---------------|----------|-----------------------------|--------|---------------|--------|--------|--------|--------|-----------------------|------|-------|-------|
| I | UNITS mg/L | | 1986 | | | 1985 | | | 1984 | | l | 1303 | |
| ì | mg/ E | MAX. I | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. |
| I AN I | PAC | 1 2.00 1 | 2.00 | 2.00 | | | i | | i | l I | į | 1 | 1 |
| 1 | KMNo4 Lime |] | | | l. 3 | l I | l I | 1 | 1 1 | 1 | | ! | l |
| í | Soda Ash | i i | | | l | i | Ì | 1 | l | l | l | 1 | I |
| 1 | F Dos. | 1 1 | | ĺ | l . | l | 1 | I | ı | ì | 1 | ı | l |
| 1 | F Res. | 1 1 | | l . | | l | l. | ı | I | l | I | ! | 1 |
| . 1 | | | 2 00 | 2.00 | | | | ===== | | | | | i |
| EB | PAC KMNo4 | 2.00 | 2.00 | 2.00 | | i | 1 | 1 | 1 | ı I | 1 | 1 | i |
| 1 | Lime | i i | | | l | i I | 1 | ì | i | i | i | ì | i |
| j | Soda Ash | i i | | | l | İ | Ì | i | I | ĺ. | 1 | I | l |
| 1 | F Dos. | 1 | | | l | 1 | Î | 1 | Ţ | I | 1 | 1 . | l |
| 1 | F Res. | 1 1 | | L I | [| ľ | 1 | 1 | | l | | | l |
| ן מג | PAC | 2.00 | 2.00 | 2.00 | | | | | | i | i | 1 | |
| AR I | KMNo4 | 1 2.00 1 | 2.00 | 1 2.00 | i | i i | 1 | i | i | i | ì | i | i |
| i | Lime | i i | | ĺ | Ĺ | i | | Ī | ı | 1 | l | ĺ | I |
| 1 | Soda Ash | 1 1 | | l | - | 1 | Î | 1 | } | 1 | I | 1 | I |
| 1 | F Dos. | 1 1 | | | | l | 1 | 1 | 1 | ľ. | i | | ! |
| 1 | F Res. | 1 1 | The Simulation distribution | | l Marie Santa | i I | | I I | | l. L'ambient année | | | l |
| I PR I | PAC | 2.00 | 2.00 | 2.00 | i, I | 1 | | | | Ī | i | | i |
| | KMNo4 | 1 | | | i. | i | ī | i | i | i. | 1 | Į. | 1 |
| Î | Lime | 1 1 | | ŀ | ľ | l . | 1 | 1 | l | 1 | 1 | ŀ | ĺ |
| 1 | Soda Ash | 1 1 | | ľ | 1 | 1 | ı | I | I | 1 | I | l. | 1 |
| 1 | F Dos. | 1 1 | | l . | l. | 1 | 1 | į. | l. | L | ŀ | 1 | L |
| 1 | F Res. | I I | | | | 1 | 1 | I | J | ı | l | 1 | į. |

TABLE 4.0: T&O CONTROL ALKALINITY ADJ. & FLUORIDATION SUMMARY

| | UNITS | | 1986 | | l 1 | 1985 | | | 1984 | | l | 1983 | |
|-----|--|------|------|------|-------------------------------|------|------------------------------|---------------|---------------|-----------------------------------|-------|------|------|
| | mg/L | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. |
| MAY | PAC KMNo4 Lime Soda Ash F Dos. | 2.00 | 0.50 | 1.95 | 3.00 | 1.00 | 1.71 | 1.00 | 0.75 | 0.91 | | | |
| JUN | PAC KMNo4 Lime Soda Ash F Dos. | 2.00 | 2.00 | 2.00 | 1.50 | 1.00 | 1.02 | 1.25 | 0.75 | 0,81 | | | |
| IUL | PAC KMNo4 Lime Soda Ash F Dos. | 2.00 | 2.00 | 2.00 | 1.50 1.50 | 1.00 | 1.02 | 2,00 | 1.00 | 1.64 | | | |
| AÜĞ | PAC KMNo4 Lime Soda Ash F Dos. | | | | 1.50 1.50 | 1.50 | 1.50 | 1.25 | 1.25 | 1.25 | | | |

TABLE 4.0: T&O CONTROL ALKALINITY ADJ. & FLUORIDATION SUMMARY

| 1 | UNITS | L | 1986 | | ı | 1985 | | 1 | 1984 | | [| 1983 | 4 |
|------------------------------|----------------------------------|----------------|-----------------|--------------|--------------------|------|--------------------|--------------------|------------------------|--------------------|----------------|-------------|--------------------|
| j | mg/L | MAX. | MIN. | I AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. |
| SEP | PAC KMNo4 Lime | | ====== | 1 1 1 | 1.50 | 1.00 | 1.28 | 1.25 | 1.00 | 1.16 | | | |
|]]] | Soda Ash F Dos. F Res. | | | | 1 1 1 | | [| | | | | | |
| CT | PAC KMNo4 Lime Soda Ash | | | | 1.00 | 0.75 | 0.80 | 1.00 | 1.00 | 1.00 | | | Î - I I I |
| Î I | F Dos. F Res. | | | | 1 | | ! | l | | | | | |
| I VC | PAC KMNo4 Lime | | | <u> </u> | [5.00 [| 0.75 | 4.03 | 1 . | | | | I I I | L L |
| 1 | Soda Ash F Dos. F Res. | | | . | | | | ! | ====== | | | | i I I |
| EC I | PAC KMNo4 Lime Soda Ash | - | | | 5.00 | 2.00 | 2.42 | I I I | [[[| L | | | |
| 1 | F Dos. F Res. | 1 | | | | | Ì | | l L | 1 | Ĺ | Ĺ | Ì |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (MAY 1984) FLUORIDATION PROFILE

| DATE | PAC | KMn04 | LIME | SODA | NaHCO3 | | UORIDE |
|------|--------|-------|------|------|--------|--------|----------------|
| | mg/L | l | ĺ | ASH | I | Dosage | Residual |
| | 1 | | | 1 | I | | |
| 1 | L | ı | L | 1 | 1 | l | |
| 2 | ı | 1 | | ſ | I | ľ | L _e |
| 3 | ľ | 1 | I | 1 | I | 1 | |
| 4 | 1 | Į | I | L | ľ | I . | |
| 5 | ı | 1 | J. | L | 1 | I . | |
| 6 | I. | 1 | ľ | 1 | 1 | l i | |
| 7 | I | 1 | 1 | 1 | 1 | 1 | |
| .8 | 1 | I | Ţ | 1 | 1 | 1 | |
| 9 | 1 | I | | J | I | 1 | |
| 10 | 1 | 1 . | I | I | I | 1 | |
| 11 | 1 | 1 | ľ | I | 1 | 1 1 | |
| 12 | 1 | I | 1 | 1 | 1 . | I I | |
| 13 | 1 | ľ | ľ | 1 | L | 1 | |
| 14 | 1 | 1 | L | 1 | 1 | 1 . | |
| 15 | I | 1 | 1 | 1 | 1 | l l | |
| 16 | 0.75 | 1 | E no | J | 1 | 1 | |
| 17 | 0.75 | 1 . | l | 1 | 1 | 1 1 | |
| 18 | 0.75 | 1 | E. | ī | 1 | 1 1 | |
| 19 | 1 0.75 | ı | 1 | 1 | 1 | Ĭ i | |
| 20 | 0.75 | L | I | 1 | 1 | 1 | (|
| 21 | 1 0.75 | 1 | ı | 1 | T | 1 | |
| 22 | 1 1.00 | 1 | l | 1 | 1 | 1 | |
| 23 | 1.00 | I | ľ | 1 | I | 1 | |
| 24 | 1 1.00 | l | l | 1 | 1 | I i | |
| 25 | 1 1.00 | I | 1 | 1 | 1 | Î Î | |
| 26 | 1 1.00 | 1 | t | t | 1 | 1 1 | fe er |
| 27 | 1 1.00 | 1 | Į. | 1 | 1 | I I | |
| 28 | 1 1.00 | 1 | ľ | ĭ | 1 | î i | |
| 29 | 1.00 | Î | Ĺ | 1 | I | I I | |
| 30 | 1 1.00 | ı | I | 1 | 1 | 1 | |
| 31 | 1 1.00 | ſ | ť | 1 | ı | 1 1 | |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (JUN 1984) FLUORIDATION PROFILE

| DATE | PAC | 2 | KMnO4 | LIME | SODA | NaHCO3 | 12. | UORIDE |
|------|------|------|-------|------|------|--------|--------|----------|
| | mg/ | L | ł | 1 | ASH | Ţ | Dosage | Residual |
| | - 1 | | | | - | | | |
| 1 | | 1.00 | 1 | L | 1 | I | | ! |
| 2 | 35 | 1.00 | 1 | 1 | Ī | I . | 1 | ! |
| 3 | .3 | 1.00 | 1 | Ī | ŀ | i | 1 | l. |
| 4 | 3.00 | 0.75 | 1 | I | I | ı | l . | L |
| 5 | | 0.75 | ı | Ţ | l | 1 | 1 | ! |
| 6 | | 0.75 | 1 | 1 | 1 | I. | 1 | l |
| 7 | | 0.75 | 1 | 1 | 1 | l . | I . | l |
| 8 | | 0.75 | 1 | 1 | ı | I | 1 | I |
| 9 | 1 - | 0.75 | Ĺ | I. | I | 1 | 1 | I |
| 10 | 1 | 0.75 | 1 | 1 | I | 1 | 1 | ľ |
| 11 | 1 | 0.75 | 1 | 1 | 1 | 1 | 1 | I |
| 12 | 1 | 0.75 | ľ | 1 | 1 | 1 | I . | l |
| 13 | 1 | 0.75 | Ţ. | Ţ | I | 1 | il. | I |
| 14 | 1 | 0.75 | I. | 1 | Î | 1 | 1 | L |
| 15 | 1 | 0.75 | 1 | 1. | 1 | 1 | I | ſ |
| 16 | 1 | 0.75 | I | 1 | 1 | I. | 1 | ſ |
| 17 | 1 | 0.75 | 1 | I | 1 | I | 1 . | t. |
| 18 | 1 | 0.75 | Í | 1 | T | ſ | I i | 1 |
| 19 | 1 | 0.75 | Ī | 1 | I | I | ľ | I. |
| 20 | 1 | 0.75 | Ĭ | 1 | Ī | 1 | 1 | Į. |
| 21 | 1 | 0.75 | i | 1 | 1 | 1 | 1 | Ī |
| 22 | Ī | 0.75 | Ĭ | 1 | 1 | 1 | I. | i |
| 23 | 1 | 0.75 | 1 | ĺ | 1 | 1 | ı | 1 |
| 24 | 1 | 0.75 | ì | Ĺ | t | Ī | Ĭ | 1 |
| 25 | | 0.75 | 1 | l | Ĺ | Î | | 1 |
| 26 | | 0.75 | 1 | T | T . | 1 | 1 | I |
| 27 | ï | 0.75 | 1 | Ï | ŧ | I. | Į. | 1 |
| 28 | | 0.75 | 1 | Ĺ | Î | Ì | I | I |
| 29 | | 1.25 | ì | Ĩ | Ĩ | ĺ | 1 | 1 |
| 30 | | 1.25 | Ì | Ī | Ĩ | ı | 1 | 1 |
| 31 | i | | 1 | Ī | in I | 1 | T | 1 |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (JUL 1984) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | |
|------|--------|-------|------|------|--------|-------------------|
| | mg/L | 1 | 1 | ASH | I | Dosage Residual |
| | 1 | | - | | | [|
| 1 | 1.25 | 1 | 1 | 1 | Ī | J Ī |
| 2 | 1.50 | 1 | 1 | £ | 1 | 1 1 |
| 3 | 1.50 | 1 | A. | 1 | I | 1 1 |
| 4 | 1.50 | I | Ţ | ţ | ľ | 1 1 |
| 5 | 1.50 | 1 | 1 | I | 1 | 1 |
| 6 | 1.50 | Ī | Ĭ. | | I | 1 |
| 7 | 1.00 | 1 | 1 | 1 | 1 | 1 1 |
| 8 | 1 1.00 | 1 | 1 | T. | 1 | T I |
| 9 | 1.00 | 1 | 1 | Ī | 1 | 1 1 |
| 10 | 1 1.00 | 1 | į. | Î | Ì | 1 |
| 11 | 1.25 | 1 | 1 . | Ì | 1 | 1 1 |
| 12 | 1 2.00 | 1 | 1 | Ĭ. | 1 | I I |
| 13 | 2.00 | 1 | Ť. | 1 | 1 | 1 1 |
| 14 | 1 2.00 | 1 . | 1 | ſ | I | 1 1 |
| 15 | 1 2.00 | ĵ | Ĭ | Ī | 1 | 1 |
| 16 | 1 2.00 | Ĭ | ĺ | Í | 1 | i i |
| 17 | 2.00 | Ĩ | Ĭ | Ì | 1 | Î Î |
| 18 | 2.00 | 1 | 1 . | 1 | -1 | 1 1 |
| 19 | 1 2.00 | 4 | ſ | 1 | 1 | 1 1 |
| 20 | 1 2.00 | Ť | Ĩ | 1 | 1 | 1 1 |
| 21 | 1 1.75 | Ī | Ĺ | Î | I | l i |
| 22 | 1.75 | Ī | Ĺ | 1 . | - I | l l |
| 23 | 1.75 | 1 | II. | 1 | T . | 1 1 |
| 24 | 1.75 | 1 | 1 | 1 | 1 | l l |
| 25 | 1.75 | Ī | Î | Ī | 1 | 1 [|
| 26 | 1.75 | 1 | 1 | İ | Ĺ | î î |
| 27 | 1.75 | 1 | 1 | 1 | I | 1 |
| 28 | 1.75 | 1 | 1 | 1 | 1 | 1 1 |
| 29 | 1.75 | Î | Î | 1 | 1 | Ī Ī |
| 30 | 1.75 | ī | Ĩ | Ĭ | Î | 1 1 |
| 31 | 1 1.25 | Í | 1 | 1 | Ĩ | i i |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (AUG 1984) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | • | UORIDE |
|------|--------|-------|------|------|--------|--------|----------|
| | mg/L | Ī | ļ | ASH | ļ | Dosage | Residual |
| 1 | 1.25 | 1 | l | I | 1 | | l |
| 2 | 1.25 | ì | 1 | 1 | I | į | ı |
| 3 | 1.25 | ī | 1 | 1 | 1 | 1 | l . |
| 4 | 1 1.25 | 1 | 1 | ſ | T | 1 | l |
| 5 | 1.25 | 1 | T | 1 | Î | I . | l |
| 6 | 1.25 | 1 | 1 | 1 | 1 | ĺ | l |
| 7 | 1 1.25 | 1 | 1 | 1 | F | 1 | l |
| 8 | 1 1.25 | 1 | 1 | 1 | Ī | l | l |
| 9 | 1.25 | 1 | 1 | 1 | 1 | 1 | l |
| 10 | 1.25 | 1 | 1 | 1 | 1 | 1 | l |
| 11 | 1.25 | I | ľ | 1 | 1 | 1 | I |
| 12 | 1.25 | I | 1 | 1 | T | 1 | l |
| 13 | 1 1.25 | 1 | J | 1 | Ĭ | 1 | l |
| 14 | 1.25 | I | ĺ | 1 | ι | 1 | ľ |
| 15 | 1.25 | 1 | 1 | 1 | 1 | 1 | I |
| 16 | 1.25 | I | 1 | 1 | t | 1 | l |
| 17 | 1.25 | 1 | 1 | 1 . | 1 . | T . | l |
| 18 | 1.25 | I | 1 | 1 | 1 | 1 | 1 |
| 19 | 1.25 | Ĭ. | 1 | 1 | l | ì | l |
| 20 | 1.25 | 1 | I | I | 1 | 1 | I |
| 21 | 1.25 | Ī | 1 | 1 | 1 | 1 | ľ |
| 22 | 1.25 | 1 | 1 | 1 | 1 | Į. | ľ |
| 23 | 1.25 | 1 | l | 1 | I | J | Į. |
| 24 | 1.25 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | 1.25 | 1 | 1 | 1 | 1 | 1 | l . |
| 26 | 1.25 | 1 | 1 | 1 | I | 1 | ı |
| 27 | 1.25 | 1 | I | L | I | 1 | 1 |
| 28 | 1.25 | I . | 4 | 1 | I | 1 | 1 |
| 29 | 1.25 | 1 | 1 | 1. | 1 | I | I |
| 30 | 1.25 | 1 | l | l | 1 | 1 | 1 |
| 31 | 1.25 | 1 | 1 | 1 | Ĩ | 1 | 1 |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (SEP 1984) FLUORIDATION PROFILE

| DATE | PAC mg/L | KMnO4 | LIME | SODA ASH | NaHCO3 | | ORIDE Residual |
|------|---------------|-----------|---------|---------------|------------|-----|-------------------|
| | 1 | 1 | l | - | | [[| |
| 1 | 1.25 | | ŀ | Î | 1 | 1 1 | |
| 2 | 1.25 | | l | ŧ. | į. | 1 1 | |
| 3 | 1.25 | | 1 | | Į. | 1 4 | |
| 4 | 1.25 | 1 | 1 | - | Į, | ! | |
| 5 | 1.00 | 1 | l | 1 | 1 | 1 | |
| 6 | 1.00 | 1 | 1 | 1 | 1 | ř ř | |
| 7 | 1.00 | 4 | | Į. | į | 1 1 | |
| 8 | 1.00 | 1 | i | T | I. | 1 1 | |
| 9 | 1.00 | 1 | I | .1 | 7 | 1 1 | |
| 10 | 1.00 | 1 | I | | Į. | 1 1 | |
| 11 | 1.00 | 1 | I | 1 | t | 1 1 | |
| 12 | 1.00 | 1 | I | 1 | 1 | 1 1 | |
| 13 | 1.25 | 1 | 1 | Ţ | 1 | 4 4 | |
| 14 | 1.25 | ı | I | I. | 1 | 1 | |
| 15 | 1.25 | 1 | I | I, | l | 1 1 | |
| 16 | 1.25 | 1 | 1 | 1 | 1 | 1 | |
| 17 | 1.25 | I | ĺ | 1 | 1 | 1 1 | |
| 18 | 1.25 | 4 | I | 1 | J | 1 1 | |
| 19 | 1.25 | 1 * | i | 1 | I | 4 1 | |
| 20 | 1.25 | 1 | I | 1 | Ĩ | 1 1 | |
| 21 | 1.25 | 1 | 1 | 1 | Ī | î î | |
| 22 | 1.25 | ľ | 1 | 1 | 1 | t I | |
| 23 | 1.25 | Ĩ | 1 | 1 | 1 | 1 | |
| 24 | 1.25 | I | I | Ī | I | 1 1 | |
| 25 | 1.25 | Ī | | Ī | Ï | 1 1 | |
| 26 | 1.25 | L | ig I | 1 | ì | 1 1 | |
| 27 | 1.25 | Ī | I | 1 | 1 | 1 1 | |
| 28 | 1.00 | Ī | Î | 1 . | I | 1 | |
| 29 | 1.00 | 1 | ĺ | Ĩ | Ĩ | 1 1 | |
| 30 | 1.00 | 1 | ĺ | Ì | 1 | 1 | |
| 31 | l moralist in | i | Ì | ſ | 1 | 1 1 | |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (OCT 1984) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | I FL | UORIDE |
|------|-------|-------|------|------|--------|------|----------|
| | mg/L | í | i | ASH | Ì | | Residual |
| | - | - i | | - | 1 | | |
| 1 | 1 1.0 | o i | i | î | Î | ì | Î |
| 2 | | | i | Î | i | 1 | Ì |
| 3 | | | í | i | i | Î | ĺ |
| 4 | | | Ì | î. | î | Î : | Î |
| 5 | | | i | ì | Î | ĺ | ĺ |
| 6 | | | i | ĺ | ī | Ī | Ī |
| 7 | | | i | ì | 1 | Î | Ì |
| 8 | | | ì | Ĩ | ì | Г | 1 |
| 9 | | | i | ì | ĺ | Ì | [|
| 10 | | | ì | Î | ì | Ĩ . | İ |
| 11 | | | î | i | i | ĩ | ı |
| 12 | | | ì | Ť | ī | ī | 1 |
| 13 | | | ì | Ĵ | ř | Ĩ | 1 |
| 14 | 131. | | î | Î | Î | Î | 1 |
| 15 | | | Ĩ | ī | 1 | Î. | l |
| 16 | | | 1 | Ī | 1 | ı | 1 |
| 17 | | 0.50 | ì | Ĩ | ſ | Ī | 1 |
| 18 | | 0 [| i | 1 | 1 | Ī | Ī |
| 19 | | | 1 | Ĩ | 1 | Ī | l |
| 20 | 1.5 | | î | ī | 1 | Γ | Ī |
| 21 | | 1.5 | ĵ | Ĩ | 1 | I | L |
| 22 | | | | Ĭ | Ĩ | ſ | I |
| 23 | 1 10 | | Ī | Î | ı | 1 | 1 |
| 24 | | | 1 | Ĩ | 1 | I | Ī |
| 25 | | | ì | ĩ | ı | ĺ | Í |
| 26 | | | i | ì | Ĩ | I | 1 |
| 27 | | | Î | Î | ì | ĺ |] |
| 28 | | | Ī | 1 | 1 | Ĭ | Ī |
| 29 | | | Ï | 1 | I. | 1 | Ì |
| 30 | | i | 1 | Ī | Ĭ. | Î | Ţ. |
| 31 | | Ì | i | 1 | 4 | Î | Ĺ |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (MAY 1985) FLUORIDATION PROFILE

| DATE | PAC | KMn04 | LIME | SODA | NaHCO3 | | UORIDE |
|------|------|-------|------|------|--------|--------|----------|
| | mg/L | I | 1 | ASH | Î | Dosage | Residual |
| | 1 | | | | 1 | | |
| 1 | 1 1 | 1 | 1 | 1 | 1 | 1 | |
| 2 | 1 | I | 1 | I | 1 | f i | |
| 3 |] 2 | 1 | 1 | 1. | 1 | 1 | |
| 4 | 1 2 | 1 | Ì | 1 | 1 | T I | |
| 5 | 1 2 | L | 1 | l | į | 1 | |
| 6 | 1 2 | 1 | 1 | 1 | l | I I | |
| 7 |] 3 | I | j | 1 | 1 | 1 3 | |
| 8 | 1 3 | I . |] | 1 | t | 1 | |
| 9 | 1 3 | ĺ | 1 | 1 | T | l i | |
| 10 | 1 2 | 1 | 1 | 1 | 1 | 1 | |
| 11 | 1 2 | I" | I | 1 | 1 | Î . | |
| 12 | 1 2 | 1 | 1 | 1 | 1 | Į I | |
| 13 | 1 2 | 1- | 1 | 1 | 1 | 1 | |
| 14 | 1 2 | 1 | 1 | 1 | 1 | f I | n e |
| 15 | 1 2 | Ï. | l | I | I | 1 | |
| 16 | 1 2 | Ĺ | ĺ | 1 | l | 1 | i. E |
| 17 | 1 2 | J | 1 | Ţ | 1 . | l . | |
| 18 | 1 2 | L | 1 | 1 | 1 | 1 1 | |
| 19 | 1 2 | I | I | T | ı | f : | (|
| 20 | 1 2 | I | Ī | I | 1 | 1 | Î |
| 21 | 1 2 | 1 | I | Ĩ | 1 | 1 | ľ |
| 22 | 1 | I | 1 | 1 | 1 | 1 | Ĭ |
| 23 | 1 | t | 1 | 1 | 1 | 1 | |
| 24 | 1 | Ĭ. | 1 | 1 | 1 | 1 1 | |
| 25 | 1 | İ | Ì | ſ | 1 . | Ĭ : | |
| 26 | 1 1 | Ĭ | | l | 1 | Ì | ľ |
| 27 | 1 | 1 | | 1 | Ĺ | | ĺ |
| 28 | 1 | I | 1 | 1 | 1 | I | ľ |
| 29 | 1 1 | Î | I | 1 | Î | 1 | |
| 30 | 1 1 | | I | 1 | Ī | l . | |
| 31 | i 1 | 1 | I | Ĩ | Î | Î . | |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (JUN 1985) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | | UORIDE |
|------|------|-------|------|------|--------|--------|----------|
| | mg/L | 1 | 1 | ASH | 1 | Dosage | Residual |
| | 1 | 1 | -1 | 1 | | | |
| 1 | 1.5 | 1 | 1 | 1 | 1 | 1 : | 5 |
| 2 | 1 | 1 | Ţ | 1 | 1 | 1 | |
| 3 | 1 1 | 1 | į | I | 1 | Į į | P |
| 4 | 1 | 1 | 1 | 1 | J. | I | |
| 5 | 1 | 1 | 1 | 1 | 1 | i . | 6 |
| 6 | 1 | 1 | I | 4 | 1 | 1 | 0 |
| 7 | 1 | 1 | I | 1 | 1 | 1 | |
| 8 | 1 1 | 1 | 1 | 1 | 1 | 1 | l l |
| 9 | 1 1 | 1 | I | 1 | I | 1 | l . |
| 10 | 1 | f | 1 | 1 | 1 | I | I . |
| 11 | 1 | 1 | 1 | 1 | 1 | 1 | l. |
| 12 | 1 | 1 | Ţ | I | 1 | 1 | |
| 13 | 1 1 | 1 | J | 1 | 1 | 1 | l. |
| 14 | 1 1 | 1 | 1 | 1 | 1 | 1 | R |
| 15 | 1 | 1 | Ţ | 1 | 1 . | 1 | ř. |
| 16 | 1 | 1 | 1 | 1 | I | 1 | l |
| 17 | 1 | 1 | 1 | 1 | 1 | 1 | ľ |
| 18 | 1 1 | 1 | 1 | 1 | Ì | 1 | Į. |
| 19 | 1 | 4 | 1 | 1 | 1 | 1 | l |
| 20 | 1 | 1 | 1 | 1 | 1 | 1 | I . |
| 21 | 1 | 1 | Ţ | 1 | 1 | ſ | [|
| 22 |] 1 | 1 | | 1 | Ī | 1 | 1 |
| 23 | 1 | Ĭ. | I | 1 | 1 | 1 | I |
| 24 | 1 1 | 1 | ſ | 1 | Î | 1 | ſ |
| 25 | 1 | l | Ĭ | I | T | 1 | 1 |
| 26 | 1 1 | T. | 1 | 1 | Ĭ. | Ţ | l |
| 27 | 1 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 28 | 1 1 | f | | 1 | 1 | 1 | Ľ. |
| 29 | 1 | 1 | 1 | 1 | 1 | 1 | ľ |
| 30 | 1 | I | 1 | 1 | 1 | 1 | ľ |
| 31 | 1 | I | 1 | 1 | 1 | Î | l |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (JUL 1985) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | | UORIDE |
|------|--------|----------|------------|------|--------|--------|----------|
| | mg/L | ! | 1 | ASH | į. | Dosage | Residual |
| 1 | 1.00 |] ====== | ====== | .1 | | | |
| 2 | 1 1.00 | Î . | ì | ī | 1 | ĺ | |
| 3 | 1 1.00 | i | l | ī | 1 | Ĭ i | |
| 4 | 1 1.00 | ī | I | I | 1 | 1 : | |
| 5 | 1 1.00 | l | Ī | Ī | I | 1 | |
| 6 | 1 1.00 | 1 | Ì | 1 | 1 | i . | |
| 7 | 1 1.00 | I. | 1 | 1 | 1 | 1 | |
| 8 | 1 1.00 | L | 1 | I. | 1 |] . | |
| 9 | 1 1.00 | 1 | Î | 1 | 1 | 1 | |
| 10 | 1 1.00 | 1 | ſ | 1 | I | 1 | |
| 11 | 1 1.00 | 1 | I | 1 | Î | 1 | |
| 12 | 1 1.00 | 1 | Ī | 1 | 1 | 1 | |
| 13 | 1.00 | 1 | t | 1 | 1 | 1 | Į. |
| 14 | 1 1.00 | I. | 1 | 1 | 1 | A | i e |
| 15 | 1.00 | 1 | l | 1 | 1 | 1 1 | 1. |
| 16 | 1 1.00 | Ĺ | t | 1 | I | 1 | |
| 17 | 1 1.00 | ŀ | ı | Ī | 1 | I | |
| 18 | 1.00 | I | 1 | 1 | 1 | 1 | Į. |
| 19 | 1.00 | 1 | 1 | 1 | 1 | 1) | l, |
| 20 | 1 1.00 | I | 1 | I | 1 | 1 . | , |
| 21 | 1 1.00 | 1 | I | 1 | 1 | 1 | ļ |
| 22 | 1.00 | į. | I | L | 1 | 1 | |
| 23 | 1.00 | t . | I | 1 | 1 | 1 | |
| 24 | 1.00 | 1 | I | 1 | 1 | 1 | |
| 25 | 1.00 | 1 | 1 | 1 | 1 | 1 | |
| 26 | 1.00 | ſ | I | | Ţ | 1 | |
| 27 | 1.00 | 1 | l | 1 | I | 1 | 8 |
| 28 | 1.00 | 1 | 1 | 1 | Ĺ. | 1 | |
| 29 | 1.00 | ļ | I | 1 | Į. | 1 | |
| 30 | 1.00 | | I | 1 | l. | 1 | |
| 31 | 1.50 | L | 1 | I | L | I | |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (AUG 1985) FLUORIDATION PROFILE

| DATE | PAC | KMn04 | LIME | SODA | NaHCO3 | | UORIDE |
|------|--------|-------|------|------|--------|--------|----------|
| | mg/L | 1 | 1 | ASH | 1 | Dosage | Residual |
| | 1 | 1 | | . | 1 | | |
| 1 | 1.50 | 1 | 1 | 1 | 1 | 1 | |
| 2 | 1.50 | 1 | 1 | 1 | 1 | l . | |
| 3 | 1.50 | 1 | I | 1 | 1 | 1 | +. |
| 4 | 1.50 | 1 | Ī | 1 | I | 1 | |
| 5 | 1.50 | 1 | 1 | 1 | 1 | I | |
| 6 | 1.50 | 1 | 1 | 1 | 1 | 1 | |
| 7 | 1.50 | 1 | 1 | .1 | 1 | 1 | l |
| 8 | 1.50 | 1 | I | 1 | 1 | 1 | |
| 9 | 1 1.50 | i | 1 | 1 | 1 | 1 | |
| 10 | 1.50 | 1 | 1 | 1 | 1 | ı | ļ |
| 11 | 1.50 | 1 | 1 | 1 | 1 | 1 | Ĺ |
| 12 | 1.50 | | 1 | 1 | 1 | 1 | l. |
| 13 | 1.50 | Į. | I | I | I | 1 | L |
| 14 | 1.50 | 1 | 1 | 1 | 1 | 1 | l . |
| 15 | 1.50 | 1 | 1 | 1 | 1 | Į į | l |
| 16 | 1.50 | 1 | I | 1 | 1 | 1 | |
| 17 | 1.50 | 1 | 1 | 1 | 1 . | 4 | l |
| 18 | 1.50 | 1 | ı | 1 | T- | Ť | l |
| 19 | 1.50 | 1 | I | Ì | T | I | ľ |
| 20 | 1.50 | T | 1 | 1 | 1 | 1 | l |
| 21 | 1.50 | 1 | 1 | 1 | T | L . | ľ |
| 22 | 1.50 | Ì | 1 | 1 | | 1 : | I |
| 23 | 1.50 | 1 | 1 | ì | Ţ | Ì | 1 |
| 24 | 1 1.50 | f | 1 | 1 | Ţ | 1 | l |
| 25 | 1.50 | 1 | 1 | | I. | j | I |
| 26 | 1.50 | 1 | 1 | Î | ľ | ſ | 1 |
| 27 | 1.50 | 1 | 1 | Ĭ | ſ | 1 | l |
| 28 | 1 1.50 | 1 | 1 | Î . | I | 1 | I |
| 29 | 1 1.50 | 1 | 1 | | 1 | ĺ | 1 |
| 30 | 1.50 | 1 | Ì | ij. | 1 | 1 | l |
| 31 | 1 1.50 | Î | 1 | 1 | ľ | 1 | ſ |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (SEP 1985) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | | UORIDE |
|------|--------|-------|------|------|--------|--------|----------|
| | mg/L | 1 | ľ | ASH | 1 | Dosage | Residual |
| | | 1 | | | | | |
| 1 | 1.50 | 1 | 1 | I | 1 . | Ī | l |
| 2 | 1.50 | 1 | l | 1 | 1 | 1 | ſ |
| 3 | 1.50 | 1 | l | 1 | 1 | I . | |
| 4 | 1 1.50 | 1 | 1 | I | 1. | 1 | I. |
| 5 | 1.50 | 1 | l | 1 | 1 . | 1 | [|
| 6 | 1.50 | 1 | l | 1 | 1 | I | |
| 7 | 1.50 | 1 | l | 1 | 1 | 1 | Į. |
| 8 | 1 1.50 | 1 | | I | 1 | L i | Ĺ |
| 9 | 1 1.50 | 1 | Ì | I | 1 | 1 | l. |
| 10 | 1 1.50 | 1 | ĺ. | 1 | 1 | ł | ľ |
| 11 | 1 1.50 | 1 | l | Ì | 1 | I . | ľ |
| 12 | 1.50 | 1 | 1 | 1 | 1 | 1 | Ĺ |
| 13 | 1.50 | 1 | 1 | I | 1 | 1 | L |
| 14 | 1.50 | 1 | 1 | 1 | 1 | 1 | Γ |
| 15 | 1.50 | 1 | 1 | 1 | 1 | Ţ | l |
| 16 | 1.50 | 1 | 1 | Ĭ | 1 | 1 | ľ |
| 17 | 1.50 | J | l | 1 | 1 | l | ľ |
| 18 | 1 1.00 | 1 | l . | 1 | 1. | l | Ĺ |
| 19 | 1 1.00 | 1 | I | 1 | 1 | 1 | t |
| 20 | 1 1.00 | 1 | I | 1 | I | l | Ĭ |
| 21 | 1 1.00 | 1 | l | 1 | I | 1 | ľ |
| 22 | 1.00 | E . | l | 1 | I | 1 | Ĵ |
| 23 | 1.00 | 1 | L | 1 | 1 | 1 | ĺ |
| 24 | 1.00 | 1 | 1 | 1 | 1 | 1 | ľ |
| 25 | 1.00 | Î | I | l | 1 | 1 | ľ |
| 26 | 1.00 | I | l | | 1 | I | l |
| 27 | 1.00 | 1 | J | I | Į. | 1 | l . |
| 28 | 1.00 | ı | I | 1 | 1 | 1 | L |
| 29 | 1.00 | 1 | I | | Ĭ | Î | ľ |
| 30 | 1.00 | l. | l | l | I | I | Ĺ |
| 31 | 1 | 1 | I | Ĭ | Ĭ | I | ĺ |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (OCT 1985)
FLUORIDATION PROFILE

| DATE | PAC | KMn04 | LIME | SODA | NaHCO3 | | |
|------|------|-------|------|------|--------|----------------|-----|
| | mg/L | 4 | 1 | ASH | 1 | Dosage Resid | ual |
| | 1 | | | | | | |
| 1 | 1.00 | 1 | 1 | 1 | 1 | 1 1 | |
| 2 | 1.00 | 1 | 1 | 1 | Ĩ | 1 1 | |
| 3 | 1.00 | 1 | 1 | 1 | 1 | 1 1 | |
| 4 | 1.00 | 1 | l. | 1 | ı | 1 1 | |
| 5 | 1.00 | 1 | 1 | 1 | ŀ | 1 1 | |
| 6 | 1.00 | 1 | 1 . | 1 | 1 | 1 1 | |
| 7 | 0.75 | 1 | I | l | 1 | 1 1 | |
| 8 | 0.75 | ì | 1 | I | l | 1 | |
| 9 | 0.75 | 1 | 1 | I | Ţ | 1 1 | |
| 10 | 0.75 | 1 | 1 | 1 | J. | 1 1 | |
| 11 | 0.75 | 1 | I | I | 1 | 1 1 | |
| 12 | 0.75 | 1 | 1 | l | 1 | 1 1 | |
| 13 | 0.75 | 1 | 1 | 1 | 1 | 1 | |
| 14 | 0.75 | 1 | 1 | 1 | Ţ. | 1 1 | |
| 15 | 0.75 | I | 1 | 1 | 1 | 1 1 | |
| 16 | 0.75 | 1 | 1 | 1 | 1 | 1 1 | |
| 17 | 0.75 | 1 . | 1 - | 1 | 1 | I I | |
| 18 | 0.75 | 1 | 1 | 1 | 1 | 1 | |
| 19 | 0.75 | I | 1 | 1 | ì | 1 1 | |
| 20 | 0.75 | 1 | 1 | I | I | T T | |
| 21 | 0.75 | I | 1 | Ì | Ţ | 1 1 | |
| 22 | 0.75 | Ĺ | 1 | 1 | 1 | 1 1 | |
| 23 | 0.75 | 1 | 1 | 1 | 1 | I I | |
| 24 | 0.75 | 1 | 1 | 1 | 1 | 1 1 | |
| 25 | 0.75 | 1 | 1 | 1 | 1 | 1 1 | |
| 26 | 0.75 | 1 | 1 | Ţ | Ĺ | 1 1 | |
| 27 | 0.75 | 1 | 1 | Ĵ | l. | 1 1 | |
| 28 | 0.75 | 1 | 1 | 1 | 1 | 1 1 | |
| 29 | 0.75 | 1 | 1 | 1 | 1 | 1 1 | |
| 30 | 0.75 | Ī | Ī | Î | Ĺ | 1 | |
| 31 | 0.75 | ī | 1 | Ì | Ī | 1 1 | |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (NOV 1985) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | | UORIDE |
|------|--------|-------|------|------|--------|--------|----------|
| | mg/L | I | 1 | ASH | | Dosage | Residual |
| | 1 | | 1 | . [| | | |
| 1 | 0.75 | 1 | 1 | ı | 1 | 1 | Ĺ |
| 2 | 0.75 | 1 | 1 | 1 | 1 | İ | l. |
| 3 | 0.75 | 1 | ı | I | 1 | I . | t. |
| 4 | 0.75 | Ī | 1 | 1 | Ī | I | Ì |
| 5 | 0.75 | 1 | Í | I | 1 | ĺ | 1 |
| 6 | 3.00 | 1 | ĺ | 1 | 1 | Î | l |
| 7 | 1 5.00 | 1 | I | 1 | ļ | l | Į. |
| 8 | 5.00 | 1 | I | 1 | 1 | 1 | |
| 9 | 3.00 | Ì | 1 | 1 | 1 | 1 | ľ. |
| 10 | 3.00 | 1 | 1 | ł. | į | 1 | Ĺ |
| 11 | 3.00 | ì | Ĭ | I | Ī | ĺ | |
| 12 | 5.00 | 1 | 1 | 1 | 1 | t i | ľ |
| 13 | 1 5.00 | 1 | Ĺ | 1 | 1 | 1 | |
| 14 | 1 5.00 | 1 | 55 | 1 | 1 | 1 | ž. L |
| 15 | 1 5.00 | I | Ĭ | 1 | I | Î i | |
| 16 | 1 5.00 | i | Ĩ | 1 | Ï | í i | ĺ |
| 17 | 5.00 | 1 | ľ | 1 | 1 | I. | |
| 18 | 1 5.00 | 1 | ľ | 1 | 1 | I | |
| 19 | 5.00 | 1 | 1 | 1 | 1 | 1 | Ľ |
| 20 | 1 5.00 | I | 1 | 1 | 1 | l . | Ĭ |
| 21 | 1 5.00 | 1 | ĺ | 1 | Î | 1 | L |
| 22 | 1 5.00 | 1. | I | 1 | 1 | Ĩ | |
| 23 | 1 5.00 | 1 | 1 | 1 | t | 1 | |
| 24 | 5.00 | 1 | Ĺ | 1 | 1 | ľ. | |
| 25 | 5.00 | İ | l | 1 | Î | 1 | |
| 26 | 5.00 | 1 | Ĩ | Î | Ì | Ī | |
| 27 | 5.00 | 1 | l | I | į. | l | |
| 28 | 5.00 | 1 | l | ſ | 1 | 1 | |
| 29 | 5.00 | I | Ī | Î | Ī | 1 | ć |
| 30 | 5.00 | i | Ì | î | Ì | Ì | |
| 31 | I | İ | ì | Î | 1 | ì | |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (DEC 1985) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | | UORIDE |
|------|----------|-------|------|------|--------|--------|--|
| | mg/L | I | 1 | ASH | I | Dosage | Residual |
| 1 | 3.00 | 1 | . I | 1 | 1 | | . ———————————————————————————————————— |
| 2 | 5.00 | i | î | ì | î | 1 | ĺ |
| 3 | 5.00 | 1 | 1 | 1 | t | ľ | I |
| 4 | 1 5.00 | 1 | i | 1 | 1 | Ī. | l |
| 5 | 1 5.00 | 1 | 1 | Ţ. | t | ı | L |
| 6 | 1 2.00 | 1 | 1 | t | T | 1 | l |
| 7 | 1 2.00 | i | 1 | ľ | Ì | 1 | 1 |
| 8 | 2.00 | 1 | 1 | 1 | Ī | 1 | 1 |
| 9 | 1 2.00 | 1 | -1 | T | 1 | 1. | L |
| 10 | 2.00 | 1 | 1 | T. | 1 | 1 | L |
| 11 | 1 2.00 | 1 | 1 | Í | I | T . | ŀ |
| 12 | 1 2.00 | 1 | 1 | 1 | 1 | I . | l |
| 13 | 1 2.00 | 1 | 1 | 1 | 1 | I . | l. |
| 14 | 1 2.00 | 1 | ı | I | I | I | l |
| 15 | 1 2.00 | 1 | 1 | I | 1 | ı | t |
| 16 | 2.00 | 1 | 1 | 1 | Ĩ | 1 | l |
| 17 | 1 - 2.00 | 1 | 1 | I | 1 | 1 | ľ |
| 18 | 1 2.00 | 1 | 1 | 1 | 1 | Ì | ľ |
| 19 | 1 2.00 | ľ | 1 | 1 | 1 | 1 | 1 |
| 20 | 1 2.00 | I | ľ | I | 1 | 1 | 1 |
| 21 | 2.00 | Ī | J | 1 | Ĩ | Ľ | 1 |
| 22 | 2.00 | 1 | 1 | 1 | I | 1 | I |
| 23 | 1. 2.00 | I | 1 | 1 | | 1 | ı |
| 24 | 2.00 | ı |) | 1 | 1 | 1 | l |
| 25 | 1 2.00 | ĺ | 1 | ľ | 1 | I | I. |
| 26 | 1 2.00 | | J. | 1 | I | 1 | 1 |
| 27 | 2.00 | 1 | T | 1 | T | 1 | Ţ |
| 28 | 2.00 | 1 | 1 | 1 | L | 1 | 1 |
| 29 | 1 2.00 | I | 1 | 1 | 1 | 1 | E |
| 30 | 1 2.00 | 1 | 1 | 1 | Ţ | 1 | ľ |
| 31 | 2.00 | 1 | 1 | 3- | t | J | I |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (JAN 1986) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | |
|----------|--------|---------|---------|---------|--------|-------------------------------|
| | mg/L | 1 | I | ASH | Ţ | Dosage Residual |
| | 1 | 1 | | - | | |
| 1 | 1 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 2 | 2.00 | 1 | l | | I | 1 1 |
| 3 | 2.00 | I | 1 | ı | I | 1 |
| 4 | 1 2.00 | I | 1 | ľ | Ţ | I I |
| 5 | 1 2.00 | Ţ | 1 | I | Ţ | 1 [|
| 6 | 1 2.00 | 1 | I | 1 | L | 1 1 |
| 7 | 2.00 | 1 | I | L | ľ | 1 1 |
| 8 | 2.00 | 1 | I | ľ | Ţ. | 1 1 |
| 9 | 1 2.00 | T | 1 | I | 1 | 1 1 |
| 10 | 1 2.00 | J | I | £ | 1 | 1 |
| 11 | 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 12 | 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 13 | 2.00 | 1 | 1 | l . | 1 | 1 1 |
| 14 | 1 2.00 | 1 | 1 | Ţ | ı | 1 1 |
| 15 16 | 2.00 | Į. | | Ţ | 1 | 1 1 |
| | | 1 | ì | (0) | | |
| 17 | 1 2.00 | 1 | Ţ | ł. | 1 . | 1 1 |
| 18 | 2.00 | d r | i. | l. | 1 | 1 1 |
| 19 | 2.00 | ik N | | 1 | 1 | Maria Maria National Maria |
| 20 | 2.00 | 1 | | 1 | 1 | the the |
| 21 | 2.00 | | l I | · | į. | |
| 22 | 2.00 | J. | Į. | 1 | ţ. | |
| 23 | 2.00 | 1 | | 1 | 1 | 1 1 |
| 24 | 2.00 | AF | I I | ik T | 1 | 1 1 |
| 25 | 2.00 | | | 1 | l. | l l |
| 26 | 2.00 | Į. | ! | | į. | |
| 27 | 2.00 | | L | į. | i. | 1 1 |
| 28 | 2.00 | I. | di Y | ik V | 1 | 1 |
| 29 | 2.00 | 1 | 1 | i. | i. | 1 1 |
| 30 | 2.00 | l | 1 | ı.ţ | Į. | |
| 31 | 2.00 | 1 | I. | | Į. | I I |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (FEB 1986)
FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | |
|------|--------|-------|------|------|--------|-----------------|
| | mg/L | I | l | ASH | Î | Dosage Residual |
| | | | | 1 | 1 | |
| 1. | 1 2.00 | 1 | 1 | 1 | I | I I |
| 2 | 2.00 | 1 | I | 1 | t | I I |
| 3 | 1 2.00 | 1 | 1 | l | 1 | 1 |
| 4 | 1 2.00 | 1 | l | 1 | ſ | 1 1 |
| 5 | 2.00 | 1 | ĺ | Ī | 1 | I I |
| 6 | 1 2.00 | 1 | b - | 1 | £. | 1 1 |
| 7 | 1 2.00 | 1 | ſ | 1 | 1 | 1 |
| 8 | 1 2.00 | Ï | l | 1 | 1 | 1 1 |
| 9 | 2.00 | 1 | Ï | I | I | 1 1 |
| 10 | 2.00 | 1 | 1 | 1 | ĺ | 1 |
| 11 | 2.00 | I . | 1 | 1 | Ĺ | l l |
| 12 | 2.00 | 1 | T | 1 | Ĭ. | 1 L |
| 13 | 1 2.00 | I | i | 1 | ľ | 1 1 |
| 14 | 1 2.00 | I | I | Ĭ. | Ī | i i |
| 15 | 2.00 | L | l | 1 | 1 | l l |
| 16 | 1 2.00 | 1 | 1 | T | 1 | 1 1 |
| 17 | 1 2.00 | 1 | 1 | 1 . | -1 | 1 1 |
| 18 | 2.00 | T . | 1 | T | I | 1 1 |
| 19 | 2.00 | 1 | ĺ. | 1 | 1 | I I |
| 20 | 2.00 | ſ | 1 | 1 | 1 | 1 |
| 21 | 2.00 | Ï | 1 | 1 | I | 1 1 |
| 22 | 1 2.00 | ſ | l | 1 | 1 | 1 1 |
| 23 | 1 2.00 | 1 | I | 1 | Ī | I I |
| 24 | 2.00 | 1 | t | I | I | 1 |
| 25 | 2.00 | 1 | t | I | 1 | t I |
| 26 | 1 2.00 | Ť | 1 | 1 | 1 | 1 1 |
| 27 | 1 2.00 | İ | 1 | I. | 1 | 1 |
| 28 | 2.00 | 1 | ĺ | 1 | Ĩ | 1 1 |
| 29 | 1 | 1 | 1 | 1 | 1 | 1 1 |
| 30 | Ĩ | 1 | 1 | 1 | 1 | 1 1 |
| 31 | 1 | I | 1 | Ĩ | 1 | 1 |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (MAR 1986) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | FLUORIDE |
|--------|--------------|------------|------|--------|--------|-------------------|
| | mg/L | 1 | 1 | ASH | 1 | Dosage Residual |
| | 2.00 | | | · | . [| |
| 1 | | d . | | | i i | |
| 2 | 2.00 | al Si | 1 | | ļ. | |
| 3 4 | 2.00 2.00 | | 1 | 1 | | |
| | | sile No | 1 | l T | 1 | 1 |
| 5 | 2.00 | 1 | i i | l T | 1 | <u> </u> |
| 6 | 2.00 | § | | 4 | d r | |
| 7 | 1 2.00 | l . | | ļ | | L t |
| 8 | 2.00 | 1 | 1 | | | 1 |
| 9 | 2.00 | Ţ | 3 | L | Į. | 1 |
| 10 | 2.00 | I | k | I. | l . | Į į |
| 11 | 2.00 | I. | | 1 | ı | I I |
| 12 | 2.00 | l | | l | I | 1 1 |
| 13 | 1 2.00 | ţ. | J | l | Į | 1 |
| 14 | 1 2.00 | ľ | | 1 | l. | |
| 15 | 2.00 | 1 | 1 | i | 1 | I I |
| 16 | 1 2.00 | 1 | 1 | 1 | 1 | 1 |
| 17 | 1 2.00 | T. | Ţ | l | 1 | 1 1 |
| 18 | 1 2.00 | Ĺ | I | l | 1 | 1 1 |
| 19 | 2.00 | 1 | I | ı | 1 | 1 1 |
| 20 | 2.00 | 1 | 1 | ţ | 1 | 1 1 |
| 21 | 1 2.00 | I | T | Ĭ. | 1 | 1 1 |
| 22 | 1 2.00 | 1 | Ì | 1 | I | 1 1 |
| 23 | 2.00 | ì | 1 | ì | 1 | 1 1 |
| 24 | 1 2.00 | 1 | ı | I | 1 | I I |
| 25 | 1 2.00 | 1 | 1 | 1 | ı | 1 |
| 26 | 1 2.00 | I | 1 | 1 | 1 | 1 . |
| 27 | 2.00 | Î | 1 | 1 | 1 | 1 1 |
| 28 | 1 2.00 | 1 | 1 | Ì | Í | 1 1 |
| 29 | 1 2.00 | ī | 1 | 1 | Ī | 1 1 |
| 30 | 2.00 | Ť | 1 | 1 | t | 1 1 |
| 31 | 2.00 | Ť | ì | 1 | I | 1 1 |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (APR 1986) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | FLUORIDE |
|------|--------|-------|------|------|--------|-------------------|
| | mg/L | 1 | 1 | ASH | I | Dosage Residual |
| 1 | 1 2.00 | | | - 1 | 1 | |
| 2 | 2.00 | i | ì | i | i . | i i |
| 3 | 1 2.00 | i | ì | î. | ì | î î |
| 4 | 2.00 | i | Î. | i | i | i i |
| 5 | 1 2.00 | i | i | ī | i | i i |
| 6 | 2.00 | ì | Î | ì | î | i i |
| 7 | 1 2.00 | ì | i | Î | î | î i |
| 8 | 1 2.00 | ì | į. | Î | i | î |
| 9 | 2.00 | î | Î | İ | î | i i |
| 10 | 2.00 | ř | Ĩ | 1 | 1 | i i |
| 11 | 1 2.00 | Î | 1 | ĺ | Î | i i |
| 12 | 2.00 | Î | 1 | I | i | i i |
| 13 | 1 2.00 | i | ī | 1 | 1 | 1 1 |
| 14 | 2.00 | 1 | 1 | 1 | Ī | 1 1 |
| 15 | 1 2.00 | Ĩ | ī | 1 | 1 | 1 1 |
| 16 | 1 2.00 | Ĭ | 1 | 1 | Ī | Î Î |
| 17 | 1 2.00 | T | Γ | 1. | 1 | 1 1 |
| 18 | 2.00 | 1 | 1. | t | 1 | 1 1 |
| 19 | 2.00 | Ĭ | 1 | 1 | 1 | T T |
| 20 | 1 2.00 | ĺ | 1 | ı | ĵ | Ì Ì |
| 21 | 1 2.00 | Ī | Ī | 1 | 1 | j i |
| 22 | 2.00 | ĺ | 1 | 1 | .1 | 1 1 |
| 23 | 2.00 | 1 | I | 1 | T | 1 4 |
| 24 | 1 2.00 | j | I | Ì | 1 | I 1 |
| 25 | 1 2.00 | ſ | ſ | 1 | 1 | Î Î |
| 26 | 1 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 27 | 1 2.00 | l. | L | 1 | 1 | 1 1 |
| 28 | 1 2.00 | Ĩ | 1 | Î | Ĭ " | 1 1 |
| 29 | 1 2.00 | ĺ | 1 | I | 1 | Ĭ Ĭ |
| 30 | 1 2.00 | I | 1 | | 1 | 1 1 |
| 31 | 1 | 1 | 1 | 1 | -1 | T I |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (MAY 1986) FLUORIDATION PROFILE

| DATE | PAC | KMnO4 | LIME | SODA | NaHCO3 | FLUORIDE |
|------|--------|-------|------|------|--------|-------------------|
| | mg/L | I | 1 | ASH | ļ | Dosage Residual |
| 1 | 2.00 | 1 | 1 | 1 | I | i i |
| 2 | 1 2.00 | 1 | Ì | 1 | 1 | I I |
| 3 | 1 2.00 | 1 | İ | ĺ | Î | 1 |
| 4 | 1 2.00 | 1 | I | 1 | I | I I |
| 5 | 1 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 6 | 1 2.00 | ľ | I | 1 | 1 | 1 1 |
| 7 | 1 2.00 | ĺ | I | 1 | I | 1 1 |
| 8 | 1 2.00 | ı | Ī | I | 1 . | I I |
| 9 | 1 2.00 | 1 | i | I | 1 | 1 |
| 10 | 2.00 | 1 | 1 | 1 | 1 | 1 |
| 11 | 1 2.00 | 1 | I | 1 | 1 | 1 |
| 12 | 2.00 | 1 | ĺ | I | 1 | 1 1 |
| 13 | 2.00 | Ì | 1 | ī | 1 | 1 1 |
| 14 | 1 2.00 | 1 | 1 | 1 | I | I I |
| 15 | 1 2.00 | 1 | 1 | T | I | 1 |
| 16 | 1 2.00 | I | 1 | 1 | 1 | L I |
| 17 | 1 2.00 | İ | 1 | I | 1 | I I . |
| 18 | 1 2.00 | 1 | Ï | 1 | ı | I I |
| 19 | 2.00 | 1 | 1 | ŀ | ľ | l l |
| 20 | 1 2.00 | 1 | 1 | 1 | 1 | I I |
| 21 | 2.00 | 1 | Í | 1 | 1 | L I |
| 22 | 2.00 | J | 1 | 1 | Ĭ | I I |
| 23 | 2.00 | 1 | ĺ | Ī | 1 | 1 1 |
| 24 | 1 2.00 | 1 | 1 | Ī | Ī | l I |
| 25 | 2.00 | 1 | 1 | . 1 | L. | 1 1 |
| 26 | 0.50 | 1 | 1 | 1 | 1 . | 1 1 |
| 27 | 2.00 | j | 1 | ſ | Y | T T |
| 28 | 1 2.00 | 1 | 1 | 1 | ľ | I I |
| 29 | 2.00 | I | 1 | 1 | L | I I |
| 30 | 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 31 | 2.00 | 1 | Ĵ | 1 | 1 | 1 1 |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (JUN 1986) FLUORIDATION PROFILE

| DATE | PAC | KMn04 | LIME | SODA | NaHCO3 | |
|------|--------|-------|------|------|--------|------------------|
| | mg/L | 1 | Í. | ASH | I | Dosage Residua |
| | 1 | 1 | | | | |
| 1 | 1 2.00 | .1 | Į. | 1 | I | 1 1 |
| 2 | 1 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 3 | 2.00 | 1 | 1 | ķ | Į. | 1 1 |
| 4 | 2.00 | I | 1 | 1 | l | Į Į |
| 5 | 2.00 | 1 | 1 | 1 | ľ | 1 1 |
| 6 | 2.00 | l | 1 | 1 | Ĭ. | J I |
| 7 | 1 2.00 | 1 | 1 | I | L | 1 1 |
| 8 | 1 2.00 | I | 1 | Ţ | l | 1 [|
| 9 | 2.00 | 1 | 1 | I | 1 | 1 [|
| 10 | 2.00 | t | 1 | 1 | 1 | 1 1 |
| 11 | 2.00 | 1 | £ | 1 | K | 1 1 |
| 12 | 2.00 | 1 | 1 | 1 | l | 1 . ! |
| 13 | 1 2.00 | I | 1 | j. | 1 | 1 |
| 14 | 1 2.00 | 1 | į. | 1 | L | 1 |
| 15 | 1 2.00 | 1 | 1 | 1 | Ĺ | 1 1 |
| 16 | 2.00 | Ī | 1 | 1 | 1 | 1 1 |
| 17 | 2.00 | 1 | Ī | 1 | 1 | Î ſ |
| 18 | 2.00 | Ĭ | ĺ | 1 | l | 1 1 |
| 19 | 2.00 | 1 | İ | 1 | 1 | 1 1 |
| 20 | 2.00 | 1 | 1 | 1 | 1 | 1 1 |
| 21 | 2.00 | 1 | Ĺ | ī | 1 | 1 1 |
| 22 | 2.00 | 1 | 1 | 1 | ì | l i |
| 23 | 2.00 | ı | ľ. | 1 | ĺ | 1 1 |
| 24 | 2.00 | Î | | Ĩ | Ī | 1 1 |
| 25 | 1 2.00 | Ì | ť | 1 | ı | 1 1 |
| 26 | 2.00 | Í | | i | ī | 1 i |
| 27 | 2.00 | Ì | İ | i | ı | Î Î |
| 28 | 2.00 | ì | 1 | i | Ĩ | 1 1 |
| 29 | 2.00 | ì | ì | i | Ĺ | i |
| 30 | 2.00 | i | i | i | 1 | ì i |
| 31 | 1 | î | i | i | i | j |

TABLE 4.1: T&O CONTROL, ALKALINITY ADJ. & (JUL 1986) FLUORIDATION PROFILE

| DATE | PAC | KMn04 | LIME | SODA | NaHCO3 | FLUORIDE | |
|------|--------|-------|------|------|--------|------------------|---|
| | mg/L | 1 | 1 | ASH | 1 | Dosage Residua | 1 |
| | | 1 | | . | | | - |
| 1 | 2.00 | 1 | I | T | T | 1 1 | |
| 2 | 2.00 | I | i | 1 | 1 | 1 1 | |
| 3 | 1 2.00 | Ĭ · | Ĩ | 1 | i. | I I | |
| 4 | 2.00 | l | l | I | 1 | 1 1 | |
| 5 | 2.00 | 1 | İ | 1 | Ī | 1 1 | |
| 6 | 1 2.00 | 1 | f | T . | 1 | 1 1 | |
| 7 | 2.00 | 1 | I | 1 | 1 | I I | |
| 8 | 1 2.00 | Ī | Ī | 1 | ſ | I I | |
| 9 | 1 2.00 | I | 1 | 1 | Ī | l f | |
| 10 | 1 2.00 | 1 | 1 | 1 | 1 | 1 1 | |
| 11 | 2.00 | 1 | 1 | 1 | I. | 1 | |
| 12 | 1 2.00 | I | I | 1 | 1 . | 1 1 | |
| 13 | 1 2.00 | Ĭ | 1 | T | ſ | I I | |
| 14 | 1 2.00 | Î | ì | 1 | 1 | 1 1 | |
| 15 | 1 2.00 | I . | i | 1 | 1 | 1 | |
| 16 | 1 2.00 | 1 | 1 | 1 | .1- | 1 1 | |
| 17 | 2.00 | 1 - | Ĺ | 1 | .1 | 1 1 | |
| 18 | 1 2.00 | Ī | 1 | 1 | T | 1 1 | |
| 19 | 1 2.00 | Ī | j | 1 | 1 | 1 1 | |
| 20 | 1 2.00 | Î | | 1 | Ī | I I | |
| 21 | 1 2.00 | Î . | 1 | 1 | 1 | I I | |
| 22 | 1 2.00 | 1 | I | 1 | 1 | 1 1 | |
| 23 | 1 2.00 | I | I | 1 | 1 | 1 1 | |
| 24 | 1 2.00 | I | Î | 1 | T | I I | |
| 25 | 1 2.00 | 1 | 1 | I | 1 | l I | |
| 26 | 1 2.00 | T | 1 | 1 | 1 | 1 1 | |
| 27 | 2.00 | î . | 1 | 1 | L | 1 1 | |
| 28 | 1 2.00 | Ĭ | ì | 1 | 1 | I I | |
| 29 | 1 2.00 | l . | Ĭ | I | 1 | 1 1 | |
| 30 | 1 2.00 | Í | Î | ï | Ĭ | i i | |
| 31 | 1 2.00 | 1 | 1 | 1 | 1 | 1 1 | |

TABLE 5.0

WPOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| OF WEAT OWENIGING | | 19 <u>8</u> 6 | | | 19 <u>8</u> 5 | | | 19 <u>8</u> 4 | | | 19_83 | | DWSP DETECTION | DRINKING WATER OBJ/ |
|---------------------------|-------|---------------|------|-----|---------------|-------------|---------|---------------|------------|-----|-------|--------------|-------------------|------------------------|
| GENERAL CHEMISTRY | MAX | MIN | AVE | MAX | MIN | AVE | мах | MIN | AVE | MAX | MIN | AVE | | GUIDEL INE 1 |
| GENERAL CHEMISTRY | | | | | | | | | | | | | | |
| ALKALINITY mg/L | 91.5 | 86.8 | 88.8 | | | | | | | | | 93 82 | 0.2 mg/L | |
| AMMONIUM TOTAL mg/L | | | | | | .025 | .090 | .006 | .033 | | | .024 | 0.05 mg/L | |
| CALCIUM mg/L | 32.5 | 29 | 30.6 | | | | | | | | | | 0.1 mg/L | |
| CHLORIDE mg/L | 19 | 10 | 13.1 | | | 15 | 15 | 12 | 15.5 | | | 13.1 13.5 | 0.2 mg/L | 250 mg/L |
| COLOUR TCU | | | | | | 8.5 1.27 | 15 4 | 1 | 6.8 1.6 | | | | 0.5 TCU | 5 TCU |
| CONDUCTIVITY umho/cm | 0.000 | 248 | 263 | | | 264 | 292 | 253 | 266 | | | 253 258 | 0.01 UMH0/CM | |
| FIELD CHLORINE (COMBINED) | | | | | | | | | 1 | | | | 0.1 mg/L | |
| F1ELD CHLORINE (FREE) | | | | | | | | | | | | | 0.1 mg/L | |
| FIELD CHLORINE (TOTAL) | | | | | | 350 | | | | | | | 0.1 mg/L | |
| FIELD PH | | | | | | | | | | | | 7.9 7.5 | 0.2 | |

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986

| GEMERAL CHEMISTRY (Cont'd) | ı | | 19 <u>8</u> 6 | | | 19 <u>8</u> 5 | | | 19 <u>8</u> 4 | | | 19 <u>8</u> 3 | | | DRINKING |
|-----------------------------------|--------|-----|---------------|------|-----|---------------|------|------|---------------|------|-----|---------------|------------|---------------|------------------------|
| GENERAL CHEMISTRY (CONT. B) | | MAX | MIN | AVE | MAX | MIN | AVE | МАХ | MIN | AVE | MAX | MIN | AVE | | WATER OBJ GUIDELINE |
| FIELD TEMPERATURE | R | | | | | | | | | | | | | | |
| FIELD TURBIDITY | R | | | | | | | | | | | | | | 1 FTV |
| FLUORIDE mg/L | R | | | * | | | ٠ | | | | | | | 0.01 mg/L | 2.4 mg/L |
| HARDNESS mg/L | R | 113 | 98 | 107 | | | | | - | | | | 114 115 | 0.5 mg/L | |
| HAGNES I UM mg/L | R T | 8.6 | 6.4 | 7.3 | | | | | | | | | | 0.05 mg/L | , |
| NITRATE #g/L | R T | .7 | <.1 | .3 | | | .458 | .710 | .175 | .408 | | | .370 | 0.05 mg/L | 10 mg/L as N |
| NITRITE mg/L | R T | .07 | ∠.01 | ∠.01 | | | .009 | .019 | .001 | .008 | | | .008 | 0.005 mg/L | 1 mg/L as N |
| NITROGEN TOTAL KJELDAHL | R T | .66 | .21 | .30 | | | .334 | .380 | .240 | .305 | | | 0.37 | 0.1 mg/L | 0.15 mg/L * |
| H | R T | | | a. | | | | | | | | | | | |
| PHOSPHORUS FILTERED REACTIVE mg/L | R T | | | | | - | | | | | | | | 0.01 mg/L | |

TABLE 5.0

WPOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| GENERAL CHEMISTRY (Cont'd) | | | 19 <u>8</u> 6 | | | 19 _85 | | | 19 <u>8</u> 4 | | | 19 <u>83</u> | | DWSP | DRINKING WATER OBJ/ |
|-----------------------------|--------|------|---------------|------|-----|---------------|------|------|---------------|------|-----|--------------|-----|----------------|------------------------|
| GENERAL CHEMISIKI (COIIC U) | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | | GUIDEL INE 1 |
| PHOSPHORUS TOTAL | R T | .148 | .020 | .048 | | | .051 | .048 | .022 | .036 | | | .06 | 0.01 mg/L | |
| SODIUM mg/L | R | 9.5 | 5.4 | 7.3 | | | | | | | | | | 0.1 mg/L | |
| TOTAL SOLIDS mg/L | R | | | | | | | | | | | | | 1 mg/L | |
| TURBIDITY FTU | R T | | | | | | | | | | - | | | 0.01 FTU | 1 FTU |
| METALS | | | | | | | | | | | | | | | |
| ALUMINUM mg/L | R T | | | | | | | | | | | | | 0.003 mg/L | |
| ARSENIC mg/L | R T | | | | | | | | | | | | | 0.001 mg/L | 0.05 mg/L |
| BARIUM mg/L | R | | | | | | | | | | | * | | 0.001 mg/L | 1 mg/L |
| BERYLLIUM mg/L | R | | | | | | | | | | | | | 0.001 mg/L | |
| BORON mg/L | R T | | | | | | | | | | | | | 0.02 mg/L | 5 mg/L |
| CADMIUM mg/L | R T | | | | | | | | | | | | | 0.0003 mg/L | 0.005 mg/L |

TABLE 5.0

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986

| METALS (Cont'd) | | | 19 <u>86</u> | | | 19 <u>85</u> | | | 19 <u>8</u> 4 | | | 19 <u>8</u> 3 | | DWSP | DRINKING |
|------------------------------|--------|--------|--------------|-----|-----|--------------|-----|-----|---------------|--------|-----|---------------|--------|---------------|-------------------|
| METALS (CONT 0) | | MAX | MIN | AVE | мах | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | LIMIT* | WATER OBJ |
| SELENIUM mg/L | R T | | | | | | | | | | | | | 0.001 mg/L | 0.01 mg/L |
| STRONTIUM mg/L | R | | | | | | | | | | | | | 0.001 mg/L | |
| Tin (no units available) | R | | ş | | | | | | | | | | * | | |
| URAN[UM ■g/L | R | | | | | | | | | | | | | 0.002 mg/L | .02 mg/L |
| VANADIUM mg/L | R | | | | | | 150 | | | | | | | 0.001 mg/L | |
| ZINC mg/L | R | | | | | | | | | | | | | 0.001 mg/L | 5 mg/L |
| PURGEABLES | | | | | | | | | | | | | | | n |
| BENZENE Ug/L | R | | | | | | | | | | | | | 1 ug/L | 10 ug/L |
| BROMOFORM Ug/L | R | | | | Ř | | , a | | | | | | | 1 ug/L | 350 ug/L + |
| CARBON TETRACHLORIDE Ug/L | R | | | | | | | 0 | 0 0 | 0 0 | 0 | 0 0 | 0 0 | 1 ug/L | 3 ug/L |
| CHLOROBENZENE Ug/L | R T | e S | | | | | | | | | | | | 1 ng/L | 100-300 ng/L h |

TABLE 5.0

WPOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| PURGEABLES (Cont'd) | 1 | - | 1986 | | - | 19 <u>8</u> 5 | | | 1984 | | | 19,83 | | DWSP DETECTION | DRINKING WATER OBJ |
|-------------------------------|--------|---------|--------|----------|----------|---------------|----------|---------|--------|----------|----------|---------|---------|-------------------|-----------------------|
| | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | LIMIT* | GUIDELINE |
| CHLORODIBROMOMETHANE ug/L | R T | 0 5 | 0 0 | 0 3.5 | 5 7 | 0 3 | 0 4.4 | 0 6 | 0 0 | 0 2.7 | 0 4 | 0 0 | 0 3 | 1 ug/L | 350 ug/L + |
| CHLOROFORM ug/L | R T | 0 25 | 0 6 | 0 17 | 15 50 | 0 9 | 1 23. | 0 52 | 0 0 | 0 32 | 10 54 | 0 28 | 2 38 | 1 ug/L | 350 ug/L ++ |
| ,2-DICHLOROBENZENE ug/L | R T | | | | | | | | | | | | | 1 ug/L | 400 ug/L 6 |
| ,3-DICHLOROBENZENE ug/L | R | | | | | | nt. | | | | | | | 1 ug/L | 400 ug/L (|
| ,4-D1CHLOROBENZENE ug/L | R | | | C C | | | | | | | | | | 1 ug/L | 400 ug/L (|
| ICHLOROBROMOMETHANE ug/L | R | 0 11 | 0 4 | 0 8.5 | 8 18 | 0 6 | 0 12 | 0 23 | 0 | 0 14 | 0 19 | 0 10 | 0 13 | 1 ug/L | 350 ug/L +- |
| ,1-DICHLOROETHANE ug/L | R | | | | | | | | | | | | | 1 ug/L | |
| ,2-D1CHLOROETHANE ug/L | R | | | | | | | | | | | | | 1 ug/L | 10 ug/L i |
| ,1-DICHLOROETHYLENE ug/L | R T | | | i i | | | | | | | | | | 1 ug/L | .3 ug/L l |
| ,1,2-DICHLOROETHYLENE ug/L | R | | | | | | | | | | | | | 1 ug/L | |

TABLE 5.0

WPOS

PLANT UNION WATER SYSTEM WATER QUALITY - 9-YEAR SUMMARY (1983 - 1986)

| PURGEABLES (Cont'd) | | | 1986 | T | | 1985 | | | 19 <u>8</u> 4 | | | 1983 | | DWSP DETECTION | DRINKING WATER OF | |
|-------------------------------------|---|-----|------|-----------|-------|------|-----|-------|---------------|--------|-----|------|-----|-------------------|----------------------|---|
| | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | LIMITA | GUIDELIN | |
| D1CHLORONETHANE ug/L | R | | | | | | | | | | | | | 5 ug/L | 40 Ug/L | C |
| 1,2 DICHLOROPROPANE ug/L | R | | | | • | | 1 | | | | 5 | | | 1 Ug/L | | |
| E1HYLBENZENE I ug/L | r | | | | | | | | | | | | | 1 ug/L | 1400 ug/L | e |
| ETHYLENE DIBROMIDE Ug/L | | | | | | | | | | , | ¥ (| | | | į. | |
| M-XYLENE ug/L | | | | | | | | | , | | | ì | | 1 ug/L | 620 ug/L | C |
| O-XYLENE Ug/L | | | | | | | | 8 | | | | | | 1 ug/L | 620 ug/L | С |
| P-XYLENE Ug/L 1 | | | - 3 | 1 | | | | 8 | | | | - 3 | | 1 ug/L | 620 ug/L | c |
| TOLUENE UG/L 1 | | | | ŝ | | | | | | | | | | 1 ug/L | 100 ug/L | C |
| 1,1,2,2-TETRACHLOROETHANE F ug/L | | | | | 0.000 | | | | | | g | | | 1 ug/L | 1.7 ug/L | e |
| TETRACHLOROETHYLENE F ug/L | | | | | | | | 0 | 0 0 | 0 0 | 0 | 0 | 0 | 1 ug/L | 10 ug/L | h |
| | | | | F 18150-1 | | | 2 | 36.00 | | | | | | | | |

TABLE 5.0

WPOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| PURGEABLES (Cont'd) | | | 19 <u>86</u> | | | 19 <u>85</u> | | | 19 <u>84</u> | | | 19 <u>8</u> 3 | | DWSP | DRINKING WATER OBJ/ |
|---------------------------|--------|-----|--------------|-----|-----|--------------|-----|-----|--------------|--------|--------|---------------|-----|-----------|------------------------|
| FUNGEABLES (CONT. 0) | | мах | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | | GUIDEL INE 1 |
| | R | | | | | | | | | | | | | 1 Ug/L | 1000 ug/L c |
| 10. Del | 1 | | | | | | | | | | | | | 1 ug/L | 6 ug/L e |
| TRICHLOROETHYLENE ug/L | 2 | | | | | | | 0 | 0 | 0 0 | 0 0 | 0 0 | 0 | 1 ug/L | 30 ug/L h |
| | R | | | | | | н | | | | | | | 3 ug/L | 350 ug/L ++ |
| | | | | | | | ę. | | | | | | | 1 ug/L | - |
| ORGANOCHLORINES | | | | | | | | | | | | | | | |
| ALDRIN ng/L | R T | | | | | | | | | | | | | 1 ng/L | 700 ng/L ** |
| ALPHA BHC ng/L | r | | | | | | - | | | | | e | | 1 ng/L | 700 ng/L c |
| ALPHA CHLORDANE ng/L | R | | | | | | | | | | | | | 2 ng/L | 700 ng/L *** |
| BETA BHC ng/L | R | | | | | | | | | | | | | 1 ng/L | 300 ng/L c |
| DIELDRIN ng/L | R T | × | | | | | | | | | | a tour | | 2 ng/L | 700 ng/L ** |

TABLE 5.0

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| ORGANOCHLORINES (Cont'd) | | 15 | <u>9 8</u> 6 | | | 19 <u>8</u> 5 | | | 19 <u>8</u> 4 | | | 1983 | | DWSP | DRINKING WATER OBJ/ |
|---------------------------|------------------|------|--------------|-----|-----|---------------|-----|-----|---------------|-----|----------|------|-----|-----------|------------------------|
| ond state of the state of | МА | СМ | IN . | AVE | MAX | MIN | AVE | мах | МІМ | AVE | MAX | MIN | AVE | LIMIT* | GUIDEL INE 1 |
| ENDRIN ng/L | | | | | | | | | | | | | | 4 ng/L | 200 ng/L |
| GAMMA CHLORDANE ng/L | | | | | | | | | | | | | | 2 ng/L | 700 ng/L *** |
| HEPTACHLOR EPOXIDE ng/L | | | | | | | | | | - | | | | 1 ng/L | 3000 +++ ng/L |
| HEPTACHLOR F | | 1 | | 1 | | î | | | | | | | | 1 ng/L | 3000 ng/L +++ |
| HEXACHLOROBENZENE F | 3 1 2 3 | | | | | | | | | | | | | 1 ng/L | 10 ng/L h |
| HEXACHLOROBUTADIENE F | | | | | | | | | | | | | | | |
| HEXACHLOROETHANE F | | | | | | | | | | | | | | 1 ng/L | 19000 ng/L e |
| LINDANE P | | | | | | | | | | | | | | 1 ng/L | 4000 ng/L |
| METHOXYCHLOR F | | | | | | | | | | 911 | | â | 3 | 5 ng/L | 100000 ng/L |
| MIREX F | | | | - | | | | | 1 | | ir is | | | 5 ng/L | |
| | | DH . | | | | | | | | | | | | | |

TABLE 5.0

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| ORGANOCHLORINES (Cont'd) | | | 19_86 | | | 19_85 | | | 1984 | | | 1983 | | DWSP DETECTION | DRINKING WATER OBJ/ |
|--|--------|-----|---------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-------------------|------------------------|
| The second secon | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | LIMIT* | GUIDEL INE 1 |
| OCTACHLOROSTYRENE ng/L | R T | | | - | | | | | | | | | | 1 ng/L | |
| 0,P-DDT ng/L | R T | | | | | | | | | | | | | 5 ng/L | 30000 ng/L d |
| OXYCHLORDANE ng/L | R T | | | | | | | | | | | | | 2 ng/L | |
| PCB TOTAL ng/L | R T | | | | | | | | | | | | 1 | 20 ng/L | 3000 ng/L t |
| PENTACHLOROBENZENE ng/L | R T | | | | | | | | | | | | | 1 ng/L | 74000 ng/L e |
| P,P-DDD ng/L | R T | | | | | | | | | | | | | 5 ng/L | d |
| P,P-DDE ng/L | R | | | | | | | | | | | | | 1 ng/L | d |
| P,P-DDT ng/L | R | | | | | | | | | | | 7 | | 5 ng/L | đ |
| 1,2,3,4-TETRACHLOROBENZENE ng/L | R | | | M | | | | | | | | | | 1 ng/L | |
| 1,2,3,5-TETRACHLOROBENZENE . ng/L | R | | | | | | | | | | | | | 1 ng/L | |
| | | | and the | | | | | | | | | | | | |

TABLE 5.0

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| | | | 19_86 | 5 | | 1985 | e. | | 19 <u>84</u> | | | 1983 | | DWSP | DRINKING |
|------------------------------------|--------|-----|-------|-----|-----|------|-----|-----|--------------|-------|-----|---------|-----|-----------|-----------------|
| ORGANOCHLORINES (Cont'd) | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | | WATER OBJ |
| 1,2,4,5-TETRACHLOROBENZENE ng/L | R T | | | | | | | | | | | | | 1 ng/L | 38000 ng/L |
| THIODAN 1 ng/L | R T | | | | | | 18 | | | | | | | 2 ng/L | 74000 ng/L e |
| THIODAN II ng/L | R T | | | | | | | | | | | | | 4 ng/L | 74000 ng/L e |
| THIODAN SULPHATE ng/L | R | | | | | | | | | | | | | 4 ng/L | 4 |
| TOXAPHENE (no units available) | R T | | | | | | | | | | | | | | · |
| 1,2,3-TRICHLOROBENZENE ng/L | R T | | | | | | | | | Sign. | - | | | 5 ng/L | 10000 ng/L |
| 1,2,4-TRICHLOROBENZENE ng/L | R T | | | | | | | | , | | - | | | 5 ng/L | 15000 ng/L |
| 1,3,5-TRICHLOROBENZENE ng/L | R | | | | * | | | | | | | dh I | Ì | 5 ng/L | 10000 ng/L |
| 2,3,6-TRICHLOROTOLUENE ng/L | R | | | 1 | | | | | | | | N N | | 5 ng/L | |
| 2,4,5-TRICHLOROTOLUENE ng/L | R T | , | | | | | | | | | | | | 5 ng/L | 10000 ng/L |
| | | | | | | | | | | | | | | | |

TABLE 5.0

WPOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| | TRIAZINES | | | 19_86 | | | 1985 | | | 19 <u>84</u> | | | 19 <u>83</u> | | | |
|--------------|------------------------|---------|--------------|-------------|-------------|-----|------|-----|-----|--------------|-----|-----|--------------|-----|-------------|-----------------|
| | | 4 | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | LIMIT* | GUIDEL INE 1 |
| TRIAZINES | | | | | 70 10 | | | | | | | | | | | |
| 2,6,A-TRICHL | OROTOLUENE F mg/L 1 | - 1 1 | | | | | | ı | | | | | | | 5 ng/L | |
| ALACHLOR | ng/L I | | 4 50 | ∠ 50 | ∠50 | | | | | | | | | | | |
| AMETRINE | ng/L I | 2 | 4 50 | ∠ 50 | ∠ 50 | | | | | | | | | | 50 ng/L | |
| ATRATONE | ng/L I | | 130 | ∠ 50 | ∠50 | | | | | | | | | | | r |
| ATRAZINE | ng/L 1 | a 3 | 2440 | ∠50 | 219 | 4 | | | | | | | | | 50 ng/L | 46000 ng/L 1 |
| BLADEX | ng/L I | R : | 215 | ∠100 | 115 | | | | - | | | | | | 100 ng/L | 10000 ng/L I |
| METOLACHLOR | ng/L I | 2 | ८ 500 | ∠500 | ∠ 500 | | | | | | | | | | | |
| PROMETONE | ng/L 1 | R | 70 | ∠50 | ∠50 | | | , | | | | | | | 50 ng/L | |
| PROMETRYNE | ng/L I | R | ∠ 50 | ∠50 | ∠50 | | | | | | | | | | 50 ng/L | 1000 ng/L 1 |
| PROPAZINE | ng/L I | R | ८ 50 | ∠50 | ∠ 50 | | | | | | | | | | 50 ng/L | |

TABLE 5.0

WOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| TRIAZINES (Cont'd) | | | 19_86 |) | | 19_85 | | | 19_84 | | | 19 <u>83</u> | | DWSP | DRINKING |
|----------------------------|--------|--------------|-------|------|-----|-------|-----|-----|-------|-----|-----|--------------|-----|-------------|--------------------------------------|
| TRIAZINES (CONT. U) | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | МІМ | AVE | MAX | MIN | AVE | LIMIT* | WATER OBJ/ CUIDELINE ¹ |
| SENCOR ng/L | R T | ∠ 100 | ∠100 | Z100 | | | | | | | | | | 100 ng/L | |
| SIMAZINE ng/L | R T | ∠50 | ∠50 | ∠ 50 | | | | | | | | | | 50 ng/L | 10000 ng/L I |
| SPECIAL PESTICIDES | | | | | | | | | | | | | | | |
| 2,4-D ng/L | R T | | | | | | | | | | | | | 100 ng/L | 100000 ng/L |
| 2,4-D BUTYRIC ACID ng/L | R T | | | | | | | | | | | | | 200 ng/L | 18000 ng/L f |
| DICAMBA ng/L | R T | | | | | | | | | | | | | 100 ng/L | 87000 ng/L I |
| PENTACHLOROPHENOL ng/L | R T | | | | | | | | | | | | | 50 ng/L | 10000 ng/L h |
| PICLORAM ng/L | R T | | | | | | | | | | | | | 100 ng/L | |
| 2,4-D PROPIONIC ACID ng/L | R T | | | | | | | | | | | | | 100 ng/L | |
| SILVEX ng/L | R T | 1 | | | ä | | | | ŀ | | | | ¥ | 50 ng/L | 10000 ng/L |
| 2,4,5-T ng/L | R T | | | | | | | | | | | | | 50 ng/L | |

| SPECIAL PESTICIDES (Cont'd) | | | 19_86 | 1 | | 1985 | | | 1984 | Aver 1 | - WAY | 1983 | AVE | | DRINKING WATER OBJ/ |
|-----------------------------------|--------|-----|-------|-----|-----|------|-------|-----|------|--------|-------|------|-----|-------------|------------------------|
| | = | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | LIMIT* | GUIDEL INE 1 |
| 2,3,4,5-TETRACHLOROPHENOL ng/L | R T | | | | | | | | | | | | | 50 ng/L | |
| 2,3,5,6-TETRACHLOROPHENOL ng/L | R T | | | | | | | | | | | | | 50 ng/L | |
| 2,3,4-TRICHLOROPHENOL ng/L | R | | | | | | | | | | | | | 100 ng/L | |
| 2,4,5-TRICHLOROPHENOL ng/L | R T | | | | 2 | | le le | | | | | | | 50 ng/L | |
| 2,4,6-TRICHLOROPHENOL ng/L | R T | | | | | | | A | | | | | | 50 ng/L | 10000 ng/L h |
| ORGANOPHOSPHOROUS PESTICIDES | 1 | | | | | | | | | | | | | | |
| DIAZINON ng/L | R T | | | | | | | | | | | | | 50 ng/L | 14000 ng/L |
| DICHLOROVOS ng/L | R T | | | | į. | | | | | | | j. | | | |
| DURSBAN ng/L | R T | | | | | | | | | | | | | | |
| ETHION ng/L | R T | | i. | | | | | | | | | | | | |
| GUTHION ng/L | R T | | | | | | | | | | | | | | |

TABLE 5.0

WOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986

| | | | 19_86 | | | 1985 | Si penganan | | 19 <u>84</u> | | | 19 <u>83</u> | | DWSP | DRINKING |
|-------------------------------------|--------|-----|-------|-----|-----|------|-------------|-----|--------------|-----|-----|--------------|------------|---------------------|---------------|
| ORGANOPHOSPHOROUS PESTICIDES (Cont' | d) | HAX | MIN | AVE | MAX | ити | AVE | MAX | MIN | AVE | MAX | MIN | AVE | DETECTION LIMIT* | GUIDELINE |
| MALATHION ng/L | R | | | | | | | | | | | | | | |
| METHYLPARATHION ng/L | R | 3 | | | | | | | | | | | | 50 ng/L | 7000 ng/L |
| METHYLTRITHION ng/L | R | | | | | | | | | | | | | | п |
| MEVINPHOS ng/L | R | | 1 | | | | | | | | | | | · | |
| PARATHION ng/L | R T | 1 | | | | | 12 24 | | | | |)) | | 50 ng/L | 35000 ng/L |
| PHORBATE ng/L | R T | T. | | | | | , S | | | | | ± | | | |
| RELDAN ng/L | R T | | | | i, | | X | | | | | | <i>y</i> . | | |
| RONNEL ng/L | R T | | | | | | | | | | | | | | |
| MASS SPEC. | | | | | | | | | | | | | | | |
| DI-N-BUTYL PHTHALATE Ug/L | R T | | | | | | el el | | | | | | | 0.1 ug/L | 34000 ug/L |
| | | | 450 - | Щ | | | | | | | | | | | |

WPOS PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| MASS SPEC. (Cont'd) | 1 | | 1986 | | | 1985 | | | 19 <u>8</u> 4 | | | 19_83 | | DWSP DETECTION | DRINKING WATER OBJ/ |
|-----------------------|-----|-----|--------|-----|-----|------|-----|-----|---------------|-----|-----|-------|-----|-------------------|------------------------|
| | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | MAX | MIN | AVE | | GUIDEL INE 1 |
| N-DICHLOROMETHYLENE- | R | | | | | | | | | | | | | 0.1 | |
| PENTACHLOROANAL INE | | | | | 3 d | | | | | | | | | ug/L | |
| ug/L | T | | | | | | | | | | | | | | |
| DIPHENYL ETHER | R | | | | | | -98 | | | | | | | 0.1 | |
| ug/L | T | | | | | | | | | | | | | ug/L | .) |
| FLUORANTHENE | R | | | | | | | | | | | | | 0.1 | |
| ug/L | 1 | | | | | | | | | | ě | | | ug/L | |
| HEXACHLOROPROPENE | R | | | | | | | | | | | | | 0.1 | |
| ug/L | 1 | | | | | | | ĺ | | l | | | | ug/L | |
| METHYL PHENANTHRENE | R | | | | | | | | | | | | | 0.1 | |
| ug/L | T | | | | | | ļ | | | | | | | ug/L | |
| NAPHTHALENE | R | | | | | | | | | | | | | 0.1 | |
| ug/L | T | | | | | | 1 | | | | | | | ug/L | |
| PENTACHLOROBUTAD LENE | R | | | | | | | | | | | | | 0.1 | |
| ug/L | T | | | | | | | | | | | | | ug/L | |
| PENTACHLOROPROPANE | R | | 8 C | | | | | | | | | | | 0.1 | |
| ug/L | T | | | | | | | | | | | | | ug/L | |
| PENTACHLOROPROPENE | R | | | | | | | | | | | | | 0.1 | |
| ug/L | T | | | | | | | | | | | Ų = | | ug/L | |
| PYRENE | R | | | | | | | | | | | ° | | 0.1 | |
| ug/L | T | | | | | | | | | | | | | ug/L | (|
| | -11 | | | | | | | 1 | | | | | | | (|

TABLE 5.0

WPOS

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| | | | فيعيين | V | - | | * | | | | | | | | p |
|---|--------|-----|--------|-----|-----|------|-----|-----|-------------|-----|-----|-------|-----|-------------|-----------------------|
| MASS SPEC. (Cont'd) | | | 1986 | | | 1985 | | | 1984 | 1 | | 19.83 | | DWSP | DRINKING WATER OBJ |
| thus of Lat (dulle d) | | МАХ | MIN | AVE | MAX | MIN | AVE | мах | MIN | AVE | MAX | MIN | AVE | LIMIT* | GUIDEL INE |
| TETRACHLORBUTANE ug/L | R T | | | | | | | | | | | | | 0.1 ug/L | |
| TETRACHLOROBIPHENYL ug/L | R T | | | | | | | | ji | | | | | 0.1 ug/L | |
| BACTERIA | | | | - 1 | | | | | | | | | | | |
| RAW WATER: | | | | | | | | | | | | | | | |
| TOTAL COLIFORN MF | R | | | | | | | | | | | | | | |
| TOTAL COLIFORM BKGD | R | | | | | | | | | | | | | ı | s |
| FECAL COLIFORM MF count/100mL | R | | | | | | | | | | | | | O | 0/0.1 mL |
| STANDARD PLATE COUNT MF count/mL | R | | 100 A | | | | | | | | | | | 0 | 500 |
| TREATED WATER: | | | 1 | | | | | | | | | | | | |
| PRESENT/ABSENT TEST | т | | | | | | | | N S S | | | | | | i C |
| TOTAL COLIFORN BACKGROUND MF count/100mL | 1 | | | | | | | | | | | 5 | Ī | O | OWDO Bacti |
| FECAL COLIFORM MF count/100mL | 1 | | | | | | | | | | | | | 0 | ODWO Bacti |

TABLE 5.0

PLANT UNION WATER SYSTEM WATER QUALITY - 4-YEAR SUMMARY (1983 - 1986)

| BACTERIA (Cont'd) | | MAX | 19 <u>8</u> 6 | AVE | MAX | 19 <u>8</u> 5 | AVE | MAX | 19 <u>8</u> 4 | AVE | MAX | 19 <u>8</u> 3 | AVE | DWSP DETECTION LIMIT* | DRINKING WATER OBJ/ GUIDELINE ¹ |
|--|---|-----|---------------|-----|-----|---------------|-----|-----|---------------|------|------|---------------|-----|-----------------------------|--|
| TREATED WATER: (Cont'd) | | MAX | MIN | AVE | MAX | MIN | AVE | MAX | PILM | NAT. | FIAA | HIN | AVE | LIMI | dorbeeme |
| STANDARD PLATE COUNT MF count/100mL | T | | | | | | | | | | | | | | |
| IF PRESENT/ABSENT TEST POSITIVE: | | | | | | | | | | | | | | | |
| COLIFORM P/A | R | | | | | | | | | | | | | | |
| FECAL COLIFORM P/A | R | | | | | | | | 1 | | | | | | |
| E. COLI P/A | R | | | | | | | | | | | | | | |
| AROMONAS P/A | R | | | | | | | | | | | | | | |
| STAPH. AUREUS P/A | R | | | | | | | | | | | | | | |
| | | | | | r | | | | | | | | | | |
| | | | | | | | - 1 | | | | | | | | d II |
| * | | | | | | | | | | | | | | | |

^{*}If other than DWSP Detection Limit A0106A/eal

PAGE 1 OF 1

TABLE 6.0: ALGAE COUNT

NO DATA AVAILABLE

TABLE 7.0: BACTERIOLOGICAL TESTING

1983

| | 1 | | | TOTAI | c | OLI | | | L | | 1 | FECAL | С | OLI | | 1 | | FECAI | STI | REP | | |
|-----|---------|-------|--------|---------|-------|----------|-------|---|--------------|-------|-------|-------|--------|-----|--------|-----|----------|----------|--------|-----|----------|-----|
| | Į Į | Α | 1 | В | 1 | С | ī | D | 1 | A | ī | Е | 1 | F | 1 | G I | A | H I | ı | I | 1 | J |
| JAN | R | | 1 | 0 | 1 | 0 | ī | | 1 | | ı | 0 | 1 | | 1 | | | 1 0 | I | 0 | ı | |
| | l T i | 0 | 1 | | ĵ | | 1 | | 1 | 0 | 1 | | 1 | | 1 | | | I | 1 | | 1 | |
| EB | R | | 1 | 0 | 1 | 0 | l | | i | | 1 | 0 | ı | 0 | 1 | ") | e. | 1 0 | 1 | | 1 | C |
| | T 1 | 0 | 1 | | 1 | | 1 | | 1 | 0 | 1 | | 1 | | 1 | | | | l | | 1 - | |
| IAR | R | | 1 | 0 | i | 0 | I | | i | | l | 0 | I | 0 | i | | | 1 0 | 1 | 0 | 1 | C |
| | T | 0 | 1 | | 1 | |] | | 1 | 0 | 1 | | 1 | | l | | | l | l | | 1 | |
| APR | R | | 1 | 0 | 1 | 0 | ľ | | ì | | 1 | 0 | I | 0 | t | | l | 1 0 | l | 0 | 1 | |
| | TI | 0 | l | | 1 | | | | - I - | 0 | 1 | | 1 | | ۱. | | | l |) | | 1 - | |
| YAL | R | | ı | 0 | 1 | 0 | 1 | | ı | | 1 | 0 | I | 0 | Ì | | Ì | 0 | 1 | | 1 | (|
| | T | 0 | l | | I | UR 31940 | 1 | | - [| 0 | 1 | | I | | I - | | [[|] | - | | | |
| JUN | R | | 1 | 0 | 1 | 0 | 1 | | i | | 1 | 0 | ı | 0 | I | | | 1 0 | 1 | 0 | 1 | |
| |] T] | 0 | 1 | | 1 | | l | | . [| 0 | 1 | | - | | - | | l |] | -1 | | 1 | |
| JUL | R | i i | 1 | 0 | 1 | 0 | L | | i | | 1 | 0 | 1 | 0 | Ţ | | l | 1 0 | Ī | 0 | Ī | |
| | T | 0 | 1 | | 1 | | | | - | 0 | . I | | 1 - | | | | | | | | 16 | |
| AUG | I R I | | I | 8 | Ī | 0 | Ī | | i | _ | 1 | 8 | 1 | 0 | 1 | | l l 2 | 1 1 | 1 | 2 | ļ | |
| | T | 8 | I | | 1 | | . I | | - J - | 5 | | | _ | | | | | | | | | |
| SEP | R | | 1 | 6 | - 1 | 0 | Ī | | l | | 1 | 5 | 1 | 1 | 1 | | l | 1 1 | 1 | 0 | l | Í |
| | T | 6 | | | 1 | | ا | | - 1 - 1 : | 4 | I | | ! - | | 1 | | | <u> </u> | | | <u>.</u> | |
| OCT | l R | | 1 | 5 | 1 | 2 | l | | Ţ | | 1 | 3 | 1 | 3 | İ | | ĺ | 1 | 1 | 3 | 1 | C |
| | 1 T | 7 | | | | | - I | | -] | | | | - I | | | | | ا سندن ي | | | | |
| VOV | l R | i | 1 | 4 | 1 | 2 | i | | 1 | 2 | 1 | 3 | 1 | 3 | 1 | | I | 1 | 1 | 0 | 1 | - 2 |
| |] T | 6 | - | <i></i> | _ 1 | | 1 | | - 1 | 4 | | | - | | - 1 | | 1] | | | | | |
| DEC | R | İ | 1 | 1 | ĺ | 4 | 1 | | I | | 1 | 5 | 1 | 0 | 1 | | Ī | 1 0 | 1 | 0 | ļ | ê |
| | l T | 5 | 1 | | 1 | | 1 | | 1, | 3 | I | | 1 | | 1 | | J. | 1 | 1 | | I | |

ALL RESULTS ARE FOR 100mL SAMPLES; TESTS CARRIED OUT AT MOE LAB, LONDON AND WINDSOR MOH LAB

A = ABSENT

B = 1-100

C = 101 - 5000

D = >5000

E = 0-10

F = 11-500

G = >500

H = 0-1

I = 2-50

TABLE 7.0: BACTERIOLOGICAL TESTING

1984

| | ĺ | | TOTAL | C | OLI | | | 1 | FECAL COLI | | | | | | | | FECAL STREP | | | | | | |
|-----|---------|---|---------|---|-----|---|---|------------|------------|----|--------------|---|---|---|---|--------|-------------|-------|---|----|----|--|--|
| | 1 | Α | l B | 1 | ¢ | l | D | 1 | Α | 1 | Е | 1 | F | 1 | G | A | H | 1 | I | ľ | J | | |
| JAN | R | | 8 | 1 | 0 | | | 1 | | 1 | 8 | 1 | 0 | 1 | | l |) 3 | į. | 0 | ſ | 0 | | |
| | T | 8 | | 1 | | 1 | | 1 | 5 | 1 | | I | | 1 | | l | l | 1 | | 1 | | | |
| FEB | R | | 5 | 1 | 1 | 1 | | - 1 1 | | Ţ. | 5 | 1 | 1 | 1 | | ĺ | 1 0 | ı | 2 | I | 0 | | |
| | TI | 6 | l | 1 | | 1 | | ļ | 4 | L | | I | | i | | l r | 1 | L | | 1 | | | |
| 1AR | R | | I 4 | 1 | 2 | 1 | | | | 1 | 4 | 1 | 2 | 1 | | |] 1 | ı | 0 | L | 1 | | |
| | I T I | 6 | I | 1 | | 1 | | 1 | 4 | ١ | | İ | | i | | l | l | 1 | | 1 | | | |
| APR | R | | I 7 | 1 | 0 | 1 | 0 | - I | | 1 | 7 | 1 | 0 | 1 | | 1 | 1 2 | 1 | | 1 | 0 | | |
| | I T I | 7 | l | 1 | | 1 | | ļ | 5 | 1 | IN IN IN AND | l | | ı | | I | 1 | 1 | | 1 | | | |
| MAY | R | | 1 6 | 1 | | 1 | | - I | | 1 | 6 | 1 | | 1 | | | 1 2 | t | 0 | Ĺ | | | |
| | I T I | 6 | ı | 1 | | 1 | | 1 | 4 | 1 | | 1 | | 1 | | | l | 1 | | 1 | | | |
| JUN | R | | 1 6 | 1 | | 1 | | - | | ī | 6 | ļ | | 1 | | | 1 0 | ı | 2 | ı | | | |
| | T | 6 | l | 1 | | 1 | | 1 | 4 | 1 | | 1 | | 1 | | | l | J | | 1 | | | |
| JUL | R | | 8 | 1 | 0 | Ī | | ì | | 1 | 8 | ı | 0 | 1 | | i | 2 | ı | 1 | 1 | | | |
| 12 | T | 8 | l | 1 | | 1 | | - 1 | 5 | 1 | | 1 | | 1 | | 1 | l | I | | I. | | | |
| AUG | R | | 1 5 | 1 | 1 | ı | | i | | I | 6 | ı | 0 | 1 | 0 | i | 1 1 | 1 | 1 | 1 | 0 | | |
| | I T I | 6 | l | I | | 1 | | _ [_ [| 4 | 1 | | 1 | | 1 | | | l | 1 | | 1 | | | |
| SEP | R | | 6 | ı | 0 | l | | 1 | | ī | 5 | Ī | 1 | ī | | | 1 | 1 | 1 | ı | 2(| | |
| | TI | 6 | l | ı | | Ī | | 1 | 4 | İ | | 1 | | 1 | | l | l | 1 | | 1 | | | |
| OCT | R | | 7 | 1 | 0 | 1 | | 1 | | 1 | 7 | 1 | 0 | 1 | | | 1 1 | ľ | 1 | 1 | | | |
| | T | 7 | l | l | | l | | _ [| 5 | Í | | I | | 1 | | l 1 | 1 | I | | 1 | | | |
| IOA | R | | J 5 | 1 | 1 | ı | | - I | | 1 | | 1 | 2 | 1 | | Ì | 1 | ľ | 2 | 1 | C | | |
| | T | 5 | l | 1 | | ı | | _ [| 4 | I | | 1 | | 1 | |] 1 | | | | 1 | | | |
| DEC | R | | 5 | 1 | 0 | 1 | | t | | 1 | 3 | 1 | 2 | 1 | | ľ | I | Ī | 2 | ì | c | | |
| | TI | 5 | 1. | 1 | | 1 | | ı | 3 | 1 | | Ì | | l | | 1 | ľ | l | | 1 | | | |

ALL RESULTS ARE FOR 100mL SAMPLES; TESTS CARRIED OUT AT MOE LAB, LONDON AND WINDSOR MOH LAB

A = ABSENT

B = 1-100

C = 101 - 5000

D = >5000

E = 0-10

F = 11-500

G = >500

H = 0-1

I = 2-50

TABLE 7.0: BACTERIOLOGICAL TESTING

1985

| | Ĭ | | 1 | OTAL | C | OLI | | W. 101 | 1 | | I | FECAL | С | OLI | | | i | FECAL STREP | | | | | | | |
|-----|------------------|---|-----------|--------|--------|-----|--------|--------------------|-------------|---|----------|-------|--------|-----|---|---|--------|-------------|---------|---|--------|---|--------------|---|--|
| | 1 | Α | 1 | В | 1 | С | 1 | D | 1 | Α | 1 | Е | ı | F | 1 | G | ı | A | l | Н | ī | I | 1 | J | |
| JAN | R T | 8 | I I | 5 0 | | 3 | 1 1 | 0 | 1 | 5 | 1 | 4 | - 6 | 4 |] | | 1 | | I | Ó | 1 | 3 | l l | 0 | |
| FEB | R T | 6 | | 4 | I I | 2 | 1 | | 1 | 4 | 1 | 3 | 1 | 3 | 1 | | 1 | | 1 | 1 | 1 | 1 |] - | 0 | |
| MAR | R T | 6 | | 4 | I I | 2 | l l | Very least regular | 1 | 4 | I I | 3 | 1 | 3 | ļ | | 1 | | 1 | 1 | 1 | 1 | - | | |
| APR | R T | 7 | I | 3 | 1 | 4 | I I | | | 5 | 1 | 4 | 1 | 3 | 1 | | 1 | | 1 | 1 | 1 | 1 | I I | | |
| MAY | R T | 6 | I | 5 | 1 | 0 | 1 | | I I | 6 | 1 1 | 5 | 1 | 0 | 1 | | 1 | | Ţ J | 2 | 1 | 0 | | 0 | |
| JUN | R T | 6 | l | 6 | Ī | 0 | 1 | 0 | | 4 |]] | 6 | 1 | 0 | 1 | | ! ! | | 1 | 2 | 1 | 0 | 1 | 0 | |
| JUL | R T | 8 | 1 | 6 | 1 | 2 | I I | 0 | - | 5 | 1 | 7 | 1 | 1 | 1 | | 1 | | 1 | 2 | 1 1 | 1 | | 0 | |
| AUG | R T | 6 | I I | 3 | 1 | 1 | 1 | | 1 | 4 | 1 | 4 | I I | 2 | 1 | | 1 | | 1 | 2 | 1 | 0 | - | | |
| SEP | R T | 7 | 1 | 1 | 1 | 1 | I | | i | 5 | <u> </u> | 1 | 1 | 6 | 1 | 0 | 1 | | 1 | 2 | 1 | 0 | I I | 0 | |
| OCT | R T | 5 | 1 | 1 | I I | 2 | 1 | 0 | 1 | | 1 | 2 | L | 2 | 1 | 0 | 1 | |] - | | 1 | 2 | l 1 | 0 | |
| NOV | R T | 6 | 1 | 1 | l I | 1 | I I | | 1 | 4 | [] | 2 | 1 | 4 | 1 | | 1 | | 1 | | 1 | 2 | 1 | | |
| DEC | R T | 7 | 1 | | Î | 2 | l I | | 1 | 5 | 1 | | 1 | 7 | 1 | 0 | į L | | l | | 1 | 2 | I | 0 | |

ALL RESULTS ARE FOR 100mL SAMPLES; TESTS CARRIED OUT AT MOE LAB, LONDON AND WINDSOR MOH LAB

A = ABSENT

B = 1-100

C = 101-5000

D = >5000

E = 0-10

F = 11-500

G = >500

H = 0-1

I = 2-50

TABLE 7.0: BACTERIOLOGICAL TESTING

1986

| | 1 | | | TOTAL | . с | OLI | | | FECAL COLI | | | | | | | | | | | | | |
|-------------|---------|--|--------|-------|-----|-------------|-------|----------|------------|------------|-------|---|---|--------|-------------|------|---------------------|----------|------------|----------|-------|---|
| | į | Α | 1 | В | 1 | С | 1 | D | 1 | A | 1 | E | l | F | ſ | G [| A | Î | Н | l I | 1 | J |
| IAN | R | | 1 | 2 | | 0 | 1 | 0 | Ì | | 1 | 2 | 1 | 4 | 1 | . ! | | 1 | 1 | ı 0 | I | 0 |
| | T | 6 | 1. | 0 | 1 | | ļ | | | 4 | . – . | 0 | 1 | | ıjsı — — | | | | | + | | |
| 'EB | R | | 1 | 2 | 1 | 0 | 1 | | i | | Í | 2 | 1 | 4 | 1 | ı | | ı | 2 | 0 | 1 | 0 |
| | [T] | 6 | 1 | | 1 | | 1 | | 1 | 4 | 1 | | 1 | |] | | | - I | | l | . I | |
| 1AR | R | | i | 2 | I | 0 | 1 | | i | | 1 | 3 | 1 | 3 | 1 | i | | Į. | 2 | 0 | 1 | |
| | [T] | 6 | 1 | | T | | 1 | J-1-127. | 1 | 4 | 1 | | 1 | وبريان | 1 | | | | | <u>.</u> | 1 | |
| PR | R | | 1 | 2 | I | 0 | i | | ì | | L | 2 | 1 | 5 | 1 | 1 | | 1 | 2 | 1 0 | 1 | |
| | T | 7 | Ī | | 1 | | 1 | | 1 | 5 | İ | | 1 | | 1 | l | | | |] | 1 | |
| 1AY | R | | 1 | 1 | ı | 1 | 1 | | i | 3,517,57,5 | ı | 1 | 1 | 5 | 1 | i | | 1 | 1 | 1 1 | 1 | 0 |
| | T | 6 | 1 | | 1 | | 1 | | ſ | 4 | I | | 1 | | 1 | | | 1 | | <u> </u> | 1 | |
| IUN | R | | 1 | 0 | ı | 4 | 1 | 0 | 1 | | 1 | 2 | 1 | 5 | 1 | i | | Ţ | 2 | 1 1 | 1 | 0 |
| :a1509: | T | 8 | 1 | | 1 | | 1 | | 1 | 5 | 1 | | ı | | 1 | | Ne 35 km/ (3-20134) | 1 | naharana i | 1 | 1 | |
| UL | R | | - 1 | 1 | Ι. | 1 | ī | 0 | 1 | | 1 | 2 | 1 | 4 | 1 | i | | 1 | 0 | 1 2 | 1 | 0 |
| | T | 6 | Ì | | 1 | | I | | 1 | 4 | 1 | | 1 | | 1 | 1 | | 1 | | 1 | 1 | |
| UG | R | | 1 | 0 | L | 0 | 1 | | 1 | | 1 | 0 | ı | 0 | 1 | 1 | | Į. | 0 | 1 0 | 1 | |
| 100000 | Т | 0 | Ì | | 1 | | I | | ļ | 0 | 1 | | I | | 1 | I | | Ţ | | 1 | 1 | |
| EP | R | | - 1 | 0 | 1 | | I | | - J. | | Ī | 0 | 1 | 0 | 1 | 0 1 | | 1 | 0 | 1 0 | 1 | 0 |
| | T | 0 | į | | i | | ì | | I | 0 | 1 | | 1 | | ſ | ! | | İ | | I | 1 | |
| СТ | R | | - I | 0 | 1 | 0 | 1 | 0 | *] : 1 | | ı | 0 | Ī | 0 | I | 0 | | 1 | | 1 0 | 1 | 0 |
| <i>,</i> 01 | T | 0 | i | 100 | i | | Î | | i | 0 | ì | | 1 | | 1 | 1 | | 1 | | 1 | 1 | |
| IOV | R | <u> </u> | - | n | 1 | 0 | I | | - [· | | · | 0 | 1 | 0 | Ī | | | <i>-</i> | | 1 0 | I | |
| | T | 0 | ì | | Ì | II Po | Ì | | Ì | 0 | i | | i | | Ì | Ì | | 1 | | Ì | 1 | |
| EC. | | | - | | i i | _ _ | f | | - I · | | 1 | | 1 | ი | | 0 I | | Ī | | I 0 | I | |
| EC | I R I | 0 | 1 | | 1 | U | ì | | i | 0 | i | | i | J | i | | | ì | | í | i | |

ALL RESULTS ARE FOR 100mL SAMPLES; TESTS CARRIED OUT AT MOE LAB, LONDON AND WINDSOR MOH LAB

A = ABSENT

B = 1-100

C = 101-5000

D = >5000

E = 0-10

F = 11-500

G = >500

H = 0-1

I = 2-50

TABLE 8.0: ALERT LEVELS (DISTRIBUTION SYSTEM)

| DATE | PARAMETER | MEASURED PARAME | TER GUIDELINE LIMIT |
|------|-----------|-----------------|-----------------------|
| 1 | | | ···· |
| į | | Î | 1 |
| ! | | Į. | ļ |
| 1 | | | î - |
| İ | | ì | T |
| 1 | | 1 | . |
| i | | | È |
| İ | | j | Í |
| I | | 1 | Į. |
| | | | i i |
| i | | i | i |
| 1 | | İ | Ţ |
| | | I | 1 |
| 1 | | i | i |
| i | | i | 4 , . |
| ļ | | Į. | |
| 1 | | | i |
| i | | Î | j |
| 1 | | | Į. |
| 1 | | i i | i i |
| i. | | î - | i |
| i | | ĺ | Ĭ |

No data available.

TABLE 8.1: ALERT LEVELS (TREATED WATER AT PLANT)

| | | | - | | | - | | |
|-----------------------|-----|-----------|----|----------|-----------|-----|-----------|-------|
| DATE | 1 | PARAMETER | ı | MEASURED | PARAMETER | ı | GUIDELINE | LIMIT |
| | 1 | | 1 | | | 1 | | |
| | i | | i | | | i | | |
| | 1 | | 1 | | | 1 | | |
| | 1 | | 1 | | | ı | | |
| | 1 | | ļ | | | - 1 | | |
| | ļ | | 1 | | | 1 | | |
| | į | | Ť | | | i | | |
| | í | | 1 | | | 1 | | |
| | 1 | | 1 | | | 1 | | |
| | 1 | | I | | | 1 | | |
| | Ţ | | 1 | | | - ! | | |
| | 1 | | 1 | | | 1 | | |
| | 4 | | i | | | ì | | |
| | Ĭ | | i | | | ĺ | | |
| | 1 | | 1 | | | 1 | | |
| | 1 | | 1 | | | - 1 | | |
| | į | | 1 | | | - 1 | ė. | |
| | i i | | ı, | | | 1 | | |
| | i | | i | | | i | | |
| | ì | | 1 | • | | 1 | | |
| | 1 | | 1 | | | 1 | | |
| | 1 | | 1 | | | 1 | | |
| | ļ | | 1 | | | 1 | | * |
| | | | 1 | | | 1 | | |
| CONTRACTOR VINE ACTOR | 1 | | 1 | | | | | |

No data available.

APPENDIX D TERMS OF REFERENCE

Purpose

To review the present conditions and determine an optimum treatment strategy for contaminant removal at the plant, with emphasis on particulate materials and disinfection processes.

Work Tasks

- Receive an information package from the MOE. Review the information provided and meet with the MOE staff, if required, to discuss the project.
- Document the quality and quantity of raw and treated waters.
- Define the present treatment processes and operating procedures.
 Prepare a progress report on Works Tasks 1-3 for the Project Committee.
- 4. Assess the methods of efficient particulate removal which would utilize the present major capital works of the plant. Evaluate the particulate removal efficiency and sensitivity of operation, assuming optimum performance of the plant.
- Assess current disinfection practices and possible improvement methods.
- Describe possible short and long-term process modifications to obtain optimum disinfection and contaminant removal.
- 7. Prepare a draft report for the project committee's review.
- 8. Prepare the final report.

 RECEIVE AN INFORMATION PACKAGE FROM THE MOE. REVIEW THE INFORMATION PROVIDED AND MEET WITH THE MOE STAFF, IF REQUIRED, TO DISCUSS THE PROJECT.

- (a) Receive an information package from the MOE concerning the plant and the study. This package includes a general terms of reference, a general table of contents for organizing the study in a manner consistent with other plant reports, the WPOS reporting tables and a copy of Ontario Drinking Water Objectives.
- (b) Review the information and prepare for a meeting to initiate the work on the project, including preparation of a schedule of manpower and staff committments.
- (c) Meet with the MOE to discuss the available data, the terms of reference, and the project staff and work schedule. If a consultant is carrying out more that one study it may not be necessary to meet with the MOE at the start of each study.

2. DOCUMENT THE QUALITY AND QUANTITY OF RAW AND TREATED WATERS.

Elements of Work

- (a) Prepare a monthly summary of maximum, minimum, and average flows for the last three consecutive years (Table 1.0). Address any discrepancies which exist between raw and treated flow rates.
- (b) Based on the above, briefly review and tabulate for the last three years, the monthly maximum, minimum, and average per capita flow for the total population served by the plant (Table 1.1). Compare the plant data with typical per capita flows for the local region. Indicate major consumers who may influence the figures.
- (c) Document the methods of measuring the raw and treated water flow rates.
- (d) Summarize, for the last three consecutive years, where available, the raw and treated water; turbidity, colour, residual aluminum/ iron, pH, temperature and treatment chemical dosages (other than disinfection and fluoridation). The summary should indicate the monthly daily average and maximum and minimum day (Table 2.0).

For the same three year period, tabulate also the daily average for the typical seasonal months of January, April, July and October as well as other months in which problems with particulate removal occurred (Tables 2). Document enough data to define and evaluate those problems.

Record other data, such as particulate counting, suspended solids, and algae counting (Table 5.0) which could reflect on particulate removal efficiency.

Document the source and methods used in determining all information.

A comparison should be made between the plant and outside laboratory information to ascertain the relative validity of the data. For plant data, emphasis should be given to plant laboratory tests rather than continuous process control instruments.

(e) Summarize for the last three consecutive years, where available, the disinfectant demand, dosages (including all disinfection related chemicals and residuals) for all application points as well as fluoridation dosage and residual. The summary should indicate the monthly daily average and maximum and minimum day (Table 3.0). For the same three year period, tabulate (Tables 3) the daily average for the typical seasonal months of January, April, July and October as well as other months in which problems with chlorine residuals and/or positive bacterial tests identified in Table 6. Document enough data to define and evaluate those problems.

Document the methods of dosage evaluation and residual measurements, and establish the validity of the data provided.

(f) Prepare a summary, based on at least three years of data, of the raw and treated water quality testing data for physical, microbiological, radiological, and chemical water quality information (Table 4). Document as much data as is needed to show possible seasonal trends in water quality. Where possible, show corresponding sets of raw and treated water quality information.

Document the source and methods used in determining all water quality information and establish the validity of the data, comparing plant and outside laboratory data.

(g) Tabulate, for the last three consecutive years, the raw and treated water bacterial test information at the plant (Table 6).

Document the source and methods used for all data provided.

- (h) Document the water sampling systems (source, pump, line-material and size, vertical rise velocity sampling location) used in the plant (similar to DWSP Questionnaire in Appendix A).
- Prepare a summary of inplant testing including Test, Sampling Point, Testing Frequency, Reporting Frequency, Testing Instrumentation including calibration.
- (j) Identify other water quality concerns, not related to particulate removal or disinfection, which should be considered as part of the assessment phase of this evaluation program.

 DEFINE THE PRESENT TREATMENT PROCESSES AND OPERATING PROCEDURES. PREPARE A PROGRESS REPORT ON WORK TASKS 1-3 (8 COPIES), FOR THE PROJECT COMMITTEE.

- (a) Where drawings are available, assemble sufficient record drawings of a reduced size, to document the general site layout and the interrelationship of major plant components. If available, include a process and piping diagram (PAPD) of the plant operations.
- (b) Prepare a simplified block schematic of all major plant components including chemical systems and indicating design parameters. Appendix B is an example of the required standard schematic.
- (c) Prepare a photographic record of the plant facilities, illustrating all of the major plant components and chemical feed systems. The record should include approximately 30-40 coloured (9 cm x 12 cm) (or 10 cm x 15 cm) prints, suitably labelled. The progress and draft reports may include photocopies in lieu of the prints.
- (d) Tabulate the design parameters for all the major plant components, with emphasis on the process operations, including chemical feeds. This information, as a minimum, must be consistent with the DWSP Questionnaire (Appendix A) and must be confirmed and verified by field observations. The design parameters should be evaluated at design, rated and actual operational flows.
- (e) Prepare a summary of how the plant is operated, including chemical dosage control, such as jar testing information, filter backwashing procedures and initiation, and pumping and flow control.
- (f) Document all reported and other apparent problems in plant operations and/or in the distribution system related to water quality. In addition list the health related parameters which exceed the Ontario Drinking Water Objectives (Table 7).
- (g) Submit 8 copies of the progress report to the Prime Consultant for distribution to the Project Committee.

4. ASSESS THE METHODS OF EFFICIENT PARTICULATE REMOVAL WHICH WOULD UTILIZE THE PRESENT MAJOR CAPITAL WORKS OF THE PLANT. EVALUATE THE PARTICULATE REMOVAL EFFICIENCY AND SENSITIVITY OF OPERATION, ASSUMING OPTIMUM PERFORMANCE OF THE PLANT.

- (a) Assess the validity and implication of all information relating to particulate removal provided in Work Tasks 1 and 2 with emphasis on method, metering and sampling, etc.
- (b) Using information provided in Work Tasks 1, 2 and 3 evaluate the plant's particulate removal efficiency. The basis of minimum particulate removal should be 1.0 F.t.u. It should, however, be recognized that it is desirable to strive for an operational level which is as low as is achievable.
- (c) Conduct an evaluation of possible optimum performance alternatives. Include jar testing using established industry practice.
- (d) Evaluate the feasibility of optimum removal using the existing plant capital works. This evaluation should consider the worst case water quality conditions, even though field testing data may not be available during the initial phase of the study (see Work Task 7).
- (e) Describe the operational procedures, management strategies, and equipment required for various feasible alternatives. Estimate chemical dosages, level of operational expertise, and sensitivity of operation of the alternatives.

5. ASSESS CURRENT DISINFECTION PRACTICES AND POSSIBLE IMPROVEMENT METHODS.

- (a) Assess the validity and implication of all information relating to disinfection provided in Work Tasks 1, 2 and 3 with emphasis on method, metering and sampling etc.
- (b) Using the information provided in Work Tasks 1, 2 and 3 evaluate the plant's ability to disinfect the water. The basis of minimum disinfection should be to ensure a water quality as described in the Ontario Drinking Water Objectives.
- (c) Conduct an evaluation of possible optimum disinfection procedures for the plant, with consideration also given to the reduction of chlorinated by-products in the treated water.
- (d) Evaluate the feasibility of the various alternatives using the existing plant capital works.
- (e) Assess the relative merits of the alternatives. Describe the operational procedures, management strategies, and equipment required for the feasible alternatives. Estimate chemical dosages, level of operational expertise, and sensitivity of operation for the alternatives.

6. DESCRIBE POSSIBLE SHORT AND LONG-TERM PROCESS MODIFICATIONS TO OBTAIN OPTIMUM DISINFECTION AND CONTAMINANT REMOVAL.

Elements of Work

(a) Prepare a list of modifications which should be considered for detailed implementation evaluation. Provide an estimated cost and possible schedule for implementation for each of the proposed modifications.

It is not the purpose of this study to provide a detailed implementation scheme for plant rehabilitation. It is, however, necessary to scope the feasible short and long-term process modifications required to achieve optimum disinfection and contaminant removals.

(b) Incorporate (a) above in the draft report.

7. PREPARE A DRAFT REPORT FOR THE PROJECT COMMITTEE'S REVIEW. (8 COPIES).

Elements of Work

(a) The report must include all information for Work Tasks 1-6.

The information must be organized and presented in a logical and co-ordinated fashion. A general table of contents (Appendix C) is provided for organizing the material in a manner consistent with other plant reports.

Submit the draft report for review by the Project Committee.

- (b) Meet with the Project Committee on site at least one week after submission of the report.
- (c) Prepare a separate letter report containing recommendation(s) concerning the need for additional field testing to cover quality conditions not available during the period of this study. The Project Committee may decide to delay completion of the final report until field data can be obtained to confirm the predictions of performance for the worst case water conditions.

8. PREPARE THE FINAL REPORT.

- (a) Conduct additional field testing if required. Discuss the implementations of the results with the Project Committee if the results differ from the predicted performance.
- (b) Amend the report as per review comments, incorporating additional field data if required.
- (c) Submit 25 copies of the final reports (including the colour photographs) to the MOE for distribution.

(7692) TD/227/L43/L43/MOE